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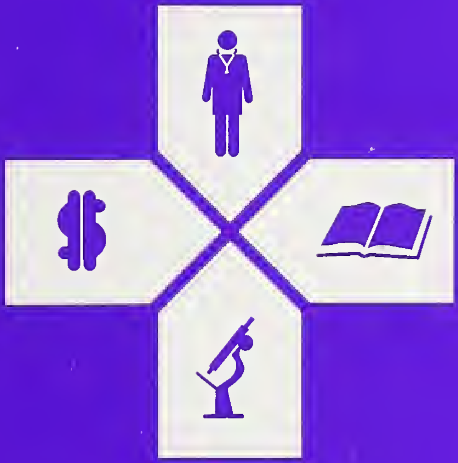
Washington, D.C.



U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Public Health Service
Health Resources and Services Administration

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ABSTRACT

Achieving a Uniform Federal Primary Care Policy-- Barriers and Opportunities

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George Washington University

The social and political pluralism in the United States has the consequence that policies tend to be ad hoc and fragmented. Primary care policy is no different. Like housing policy or transportation policy, it is the aggregate of decisions by four branches of Federal Government: legislative, executive, judicial, and the quasi-autonomous regulatory agencies. Not only are those decisions made by diverse parts of the government, they are made mostly without explicit consideration of primary care. Instead, they are decisions about research support, about education and training, or about service financing. As a consequence of these factors, primary care policy is neither uniform nor consistent.

If we did have a consistent policy in support of primary care, we would train numbers of generalists and specialists to meet the population's demand for their services; we would pay primary care practitioners sufficiently to attract enough trainees; we would have a service delivery infrastructure geared toward the primary care needs of the population; and we would maintain an appropriate research base in primary care.

In education and training, current policy is not working. Interest in primary care careers among medical students has declined, even though grants under Title VII of the Public Health Service Act support training in family medicine, general pediatrics, and general internal medicine. Although important, this support is small compared with Medicare payments for direct and indirect medical education. These payments, which total many times as much as Title VII grants, mainly support the current mix of trainees.

In payment for physician services, primary care physicians are expected to receive more per unit of service than specialty physicians under the new Medicare Resource-Based Relative Value Schedule. Generalist physicians should experience significant (greater than 25 percent) increases in annual incomes from the new payment system. New Federal laws also should improve payments to generalists under Medicaid. These policies may alter the specialty mix, but other forces, such as the volume of high-technology services, may intervene.

In service delivery, Federal programs that support primary care, such as Family

Planning, Migrant Health, and the Preventive Health and Child Health block grants, have not fared well. Community Health Center appropriations have barely kept pace with inflation. More encouraging developments are hospital initiatives that may limit privileges for surgeons and other specialists, and the expansion of managed care plans that will rely heavily on primary care physicians as gatekeepers.

The research base for primary care is limited. Funds for this research are extremely limited relative to total funding for biomedical research. Somewhat encouraging are the designation of some National Research Service Awards to train primary care researchers and the establishment of the Agency for Health Care Policy and Research with an explicit mission of supporting primary care research.

Prospects for a more consistent primary care policy are better in the context of health care reform. Redesigning the U.S. health system offers the opportunity to debate training, payment for services, service delivery, and research together.

From Demonstration to Dissemination: How We Can Spread the Word on Integrating Public Health and Primary Care

Bruce Behringer, M.P.H.
Virginia Primary Care Association

The topic which I will describe is one which would appear quite simple: integrating public health and primary care principles into more effective and responsive practices. The fact that it is a topic in such an important national conference may indicate the professional view that work remains to be done in this area.

The goals cited in Healthy People 2000 and a series of other governmental and foundation reports relate health status and causes of death among Americans to a defined set of factors: nonmodifiable personal characteristics, modifiable individual behaviors, and environmental influences. These reports emphasize the influencing role of the primary care provider in addressing these problems. Incorporation of personal preventive services into primary care practices as well as involvement of primary care practitioners in broader community-wide health protection and promotion efforts is seen as an important step in reaching these national goals.

The purpose of this presentation is to discuss the background on the "whys" and "hows" integration of these basic concepts into practice can be accomplished. I have organized this presentation into three parts. First, a few borrowed concepts about how public health and primary care should interact are proposed. Second, three examples of how they have been integrated are presented. Finally, some basic considerations to guide future planning are outlined to assist in institutionalizing public health-primary care integration.

The Basic Orientations of Public Health and Primary Care

In preparing this presentation I had to reinvestigate some very basic principles about both public health and primary care. There are some key understandings and constant reminders necessary when promoting the integration of thoughts, practice, or regulation among these actors and programs.

The basic tenets of public health practice were solicited from a number of distinguished public health directors from across the State of Virginia. They cited the preventive medicine approach as their philosophy in promoting public health. The three tenets included:

- Focus on groups and populations;

- Use of an epidemiological approach and thought process that measures problems, defines target groups, designs interventions and evaluates their impact; and

- Uses of concepts of primary, secondary, and tertiary prevention with a focus on disease etiology and the role of behavior.

Not too remarkably, these preventive medicine specialists also identified three aspects to primary care practice, the same ones noted by a number of primary care physicians practicing in Virginia's community health centers. These were:

- Diagnosis and treatment of acute and chronic diseases;

- Health protection services; and

- Disease prevention.

It appears that disease prevention aspects on both lists should form a natural alliance between preventive medicine/public health and primary care professionals. One might then assume that there is a "common mission" between the two which can help to form the basis of natural potential interrelationships and linkages among practitioners at the community level.

Units of Practice And Solution

However there is the problem of perspective and orientation regarding which end of the looking glass the professional peers through. The old health education concept of Units of Practice is helpful in identifying why traditional approaches to public health and primary care sometimes makes promoting integration difficult. Figure 1 demonstrates the opposite directions from which public health and primary care view their prevention responsibilities. Public health practice usually begins with assessing community needs, defining affected subgroups, and in some cases, addressing prevention or health protection activities through individual patient care. Primary care practice, on the other hand, begins (and too often ends) with the patient. In some cases, the primary care practitioner will engage families and other larger groups in their efforts at preventive efforts which are linked to a specific patient diagnosis and treatment service.

As those in primary care engage in their activities of diagnosis, treatment, protection, and prevention with their patients, they sometimes find that work with targeted groups which influence their patient's health (e.g., family members and work sites) is helpful. Often frustrated with repeated attempts to secure change in the patient's health status or behaviors, the primary care clinician finds himself enmeshed with parts of or the entire community as a necessary part of the solution to the patient care problem. This phenomenon describes the concept of Units of Solution--those other individuals, groups and influences which, if properly used, can become part of the answer to the problems of the Unit of Practice. Units of Solution can be a basic building block to elaborate linkages between public health and primary care providers.

Figure 1 depicts the model of Units of Practice and Solution and describes the orientation of public health and primary care practitioners. Understanding the frame of reference of the two professions is important in developing workable relationships over time.

One sample of how these concepts are used in practice is posed for consideration. The following two figures display the steps needed to demonstrate how the Units of Practice and Solution can be used effectively. Figure 2 shows the simple relationships among health status indicators, the health services delivery system and the role of patients in disease prevention efforts. Figure 3 portrays how Units of Solution can help define collaborative prevention interventions which can be shared and reinforced by primary care and public health experts. This is a model which I use regularly with community groups and health professionals to help them define their various roles in improving health status, be it a patient or a community related.

Figure 2 views the example of cardiovascular disease as a personal and/or community health issue. Most people can cite some type of health status measurement related to heart disease and stroke, undiagnosed or uncontrolled hypertension. Multiple requirements of the health care system are easily identified: patient screening and diagnosis, treatment through pharmaceuticals, weight and diet control, and elimination of smoking behaviors, and in its worst phase, hospitalization and rehabilitation services. Patients usually understand their own roles in changing individual knowledge about their heart and risk factors, changing their attitudes about their susceptibility and potential severity of the disease and steps in altering their personal unhealthy behaviors.

A practical display of Units of Practice and Units of Solution is shown in Figure 3. This comes from a cardiovascular risk reduction program implemented by Tri County Health Services, a rural community health center in Eastern North Carolina in 1980-82. The incidence of cardiovascular mortality and morbidity for the county was very high and many individual health center practice patients, our Unit of Practice, displayed multiple cardiovascular risk factors which were not amenable to change through more traditional medical practice methods. Multiple interventions were designed by an interdisciplinary staff primary care physicians, public health officials, outreach nurses and health educators with assistance from a number of patient and community focus groups. The listed interventions focused on changing the primary care practice (the traditional health system) and involving individuals, families, social and work groups and the community in affecting change in individuals' knowledge, attitudes and behaviors (traditional public health targets). Using multiple Units of Solution represented by the different risk reduction activities helped reinforce patient changes.

Figure 1

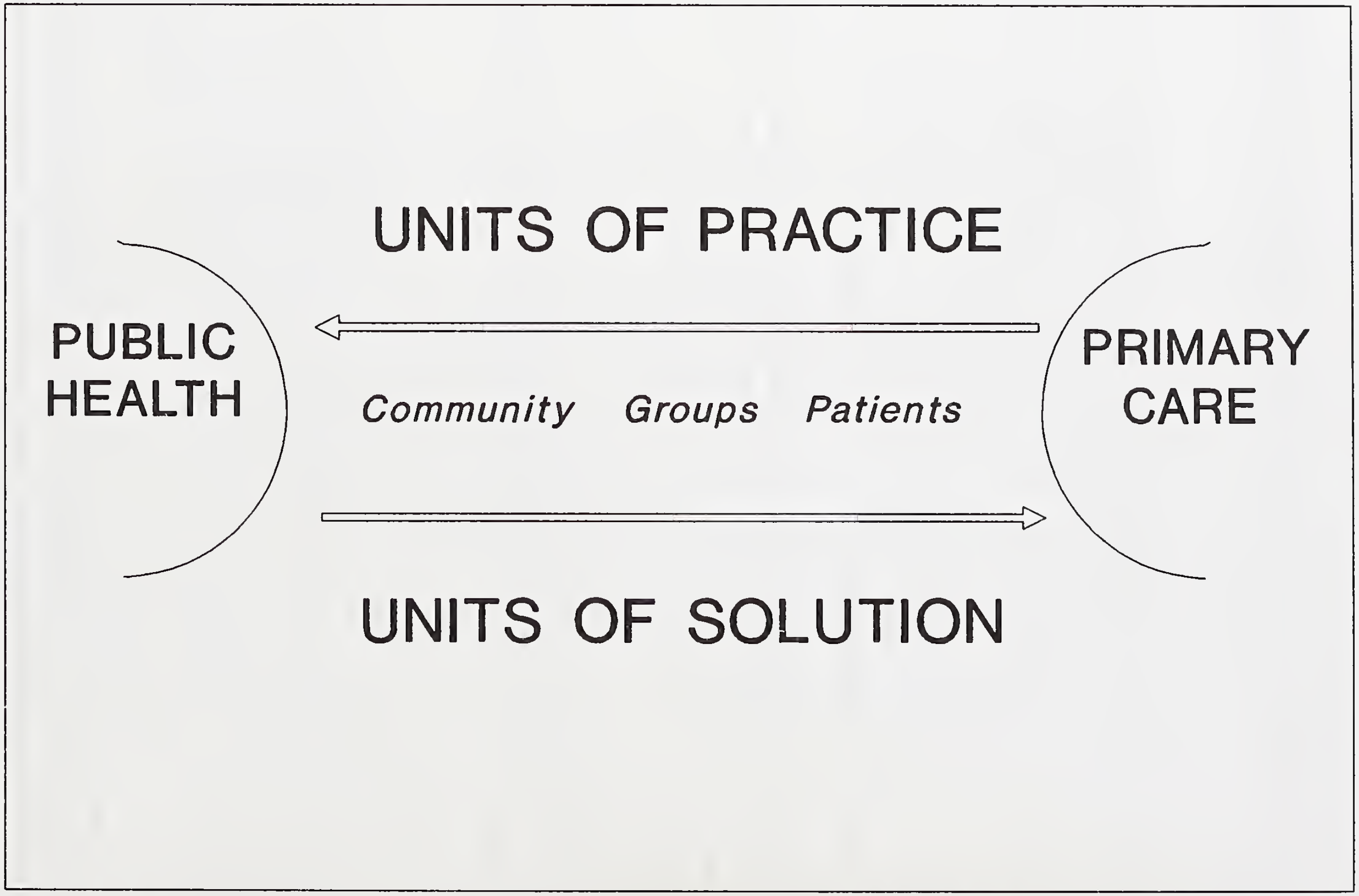
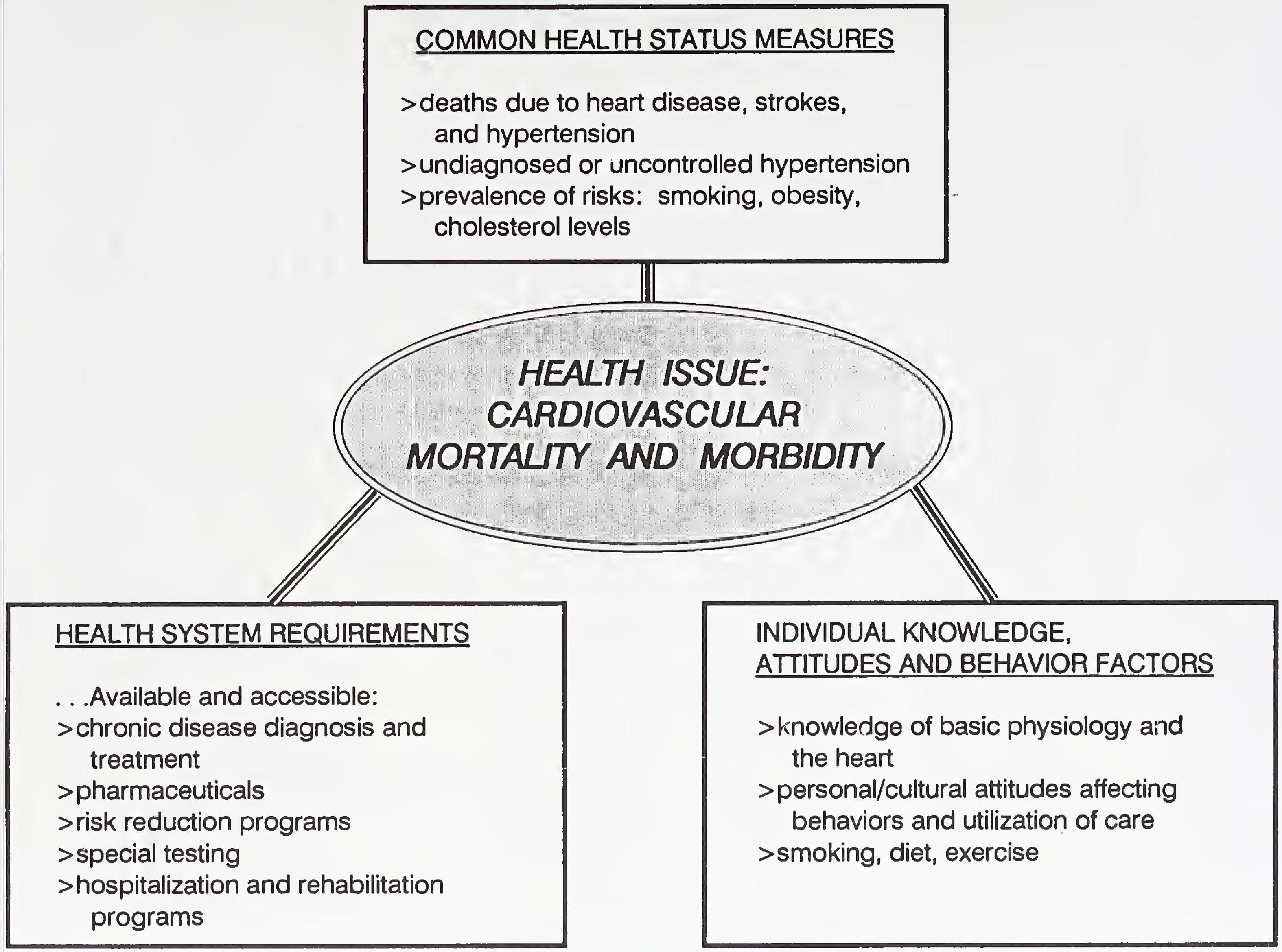

UNITS OF PRACTICE
PUBLIC HEALTH
PRIMARY CARE
Community
Groups
Patients
UNITS OF SOLUTION

FIGURE 2

ASPECTS OF COMMUNITY HEALTH ISSUES



COMMON HEALTH STATUS MEASURES

- >deaths due to heart disease, strokes, and hypertension
- >undiagnosed or uncontrolled hypertension
- >prevalence of risks: smoking, obesity, cholesterol levels

HEALTH ISSUE: CARDIOVASCULAR MORTALITY AND MORBIDITY

HEALTH SYSTEM REQUIREMENTS

. . .Available and accessible:
- >chronic disease diagnosis and treatment
- >pharmaceuticals
- >risk reduction programs
- >special testing
- >hospitalization and rehabilitation programs

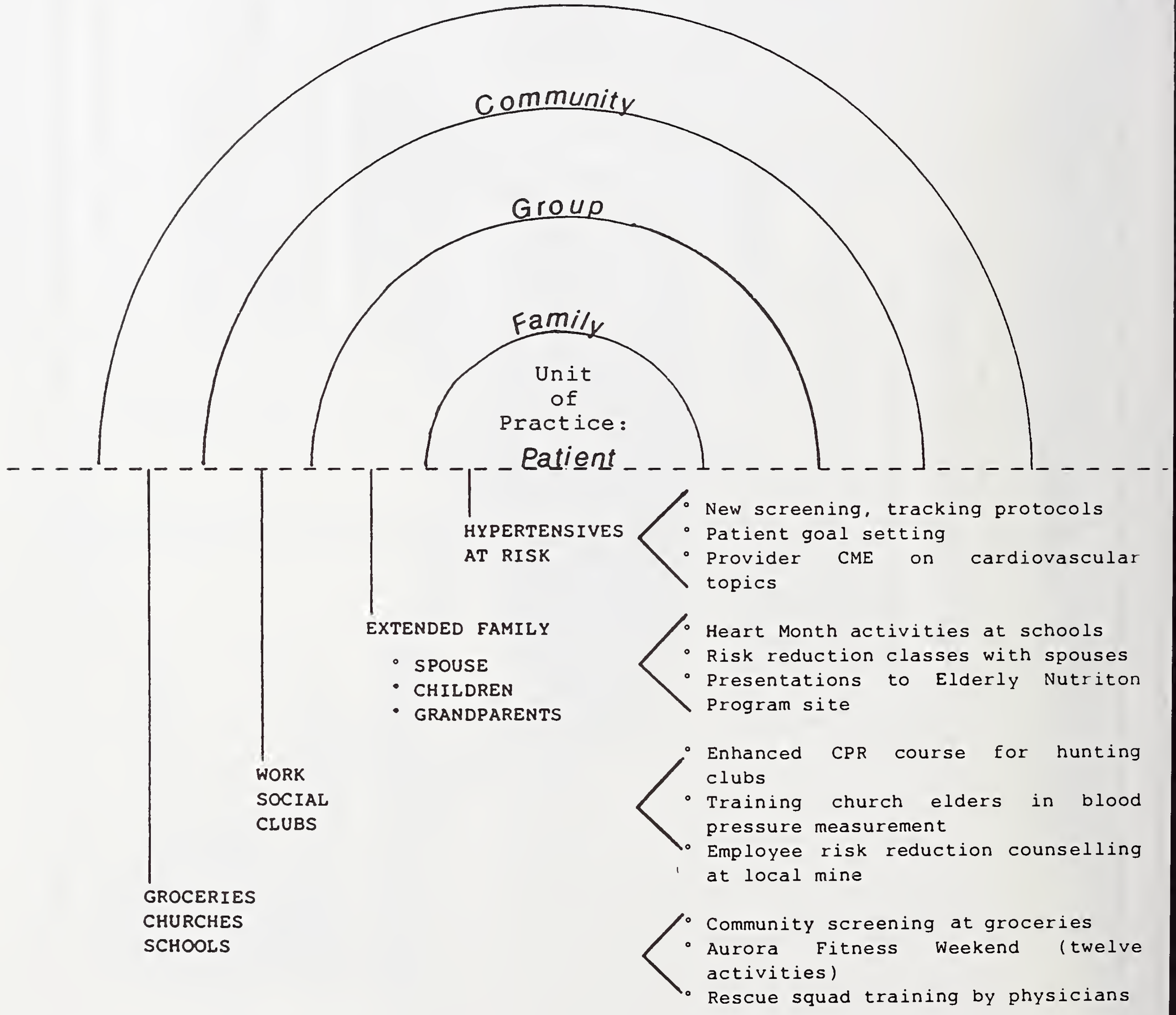
INDIVIDUAL KNOWLEDGE, ATTITUDES AND BEHAVIOR FACTORS

- >knowledge of basic physiology and the heart
- >personal/cultural attitudes affecting behaviors and utilization of care
- >smoking, diet, exercise

FIGURE 3

Cardiovascular Risk Reduction Program

UNITS OF SOLUTION



HYPERTENSIVES AT RISK

- New screening, tracking protocols
- Patient goal setting
- Provider CME on cardiovascular topics

EXTENDED FAMILY

- SPOUSE
- CHILDREN
- GRANDPARENTS

- Heart Month activities at schools
- Risk reduction classes with spouses
- Presentations to Elderly Nutriton Program site

WORK
SOCIAL
CLUBS

- Enhanced CPR course for hunting clubs
- Training church elders in blood pressure measurement
- Employee risk reduction counselling at local mine

GROCERIES
CHURCHES
SCHOOLS

- Community screening at groceries
- Aurora Fitness Weekend (twelve activities)
- Rescue squad training by physicians

The rationale for this prolonged theoretical introduction is to specify the common area of interest among primary care and public health practices as prevention. In understanding the traditional frames of reference described by Units of Practice and by using Units of Solution as a framework for designing collaboration, efforts to more effectively communicate and integrate public health and primary care advocates can be explained and facilitated.

Defining the Approaches to Integration

Two approaches are suggested as conceptual models for promoting integration.

One approach is the single point of service integrated model. This is easily demonstrated when public health principles are utilized in primary care settings. These are community oriented primary care practices and emphasize the skills of practice epidemiology, population-focused intervention programs, and interweaving diagnosis, treatment, protection and prevention efforts.

This single point integration also exists in more traditional public health settings where primary care service delivery is delivered. A small number of health departments across the country have either taken or evolved into the role of providing diagnosis and treatment services for a broader general medical population. These services have been successfully integrated with more traditional public health principles to result in single point integrated services.

The second type of integration model is demonstrated through coordinated and focused cooperative efforts between primary care and public health entities. These are normally organized on a program basis with each entity contributing within their traditional roles. Many examples of this demonstration can be cited. Community health fairs, collaborative outreach, categorical service programs, and coordinated immunization campaigns are all examples.

Three Examples of Integration and Dissemination Models

Below are described three model efforts based upon the principles of Units of Practice, Units of Solution and the two integration approaches which illustrate the use of this model. The first describes the use of an existing primary care practice network to involve private pediatricians and public health departments in service to uninsured children in Virginia. The second is based upon the Virginia Cooperative Agreement's integration of primary care and public health roles and resources in medically underserved areas through community health centers. The third includes proposals to involve the integration of primary care and public health with yet a third important factor, the health professions training programs. Each focuses on both the demonstration of integration efforts as well as the methods of further disseminating the results.

Dissemination Through Effective Use of Professional and Community Networks: The Roanoke CHIP Program

The most effective method of disseminating new ideas and demonstrations is through the use of social networks. The identification of professional social networks among public health and primary care practitioners is relatively straightforward.

One example of a public-private integrated partnership is the Comprehensive Health Investment Project (CHIP) of Roanoke, Virginia. CHIP is designed to promote access to care and improve primary care utilization and health status among uninsured and Medicaid eligible children. It has integrated:

- A public health focus through gaining service for an identified population of children whose health status was poorer because of barriers to health care and education.
- A primary care focus in reducing the difficulties of caring for uninsured and Medicaid children, particularly by reducing missed appointments, improving compliance to treatment regimens, and seeking resources to address broader social factors that affected the childrens' health.

CHIP became an identifiable, broad-based community coalition, but it began in 1987 with a small number of private practice pediatricians, the local public health department director, and the chairperson of the board of directors of the area's community action agency. The program identifies and matches needy uninsured and Medicaid enrolled children with private pediatricians who volunteer to accept children enrolled in CHIP. These primary care services are enhanced by case management and health education services provided by public health nurses and family support efforts coordinated through the CAP Program. Well over 500 children are currently enrolled through CHIP. In this example the primary care-public health common mission became a shared responsibility for the treatment and support services for these children and their families.

The social, professional, business, and related organizational networks of the Roanoke Valley were used to promote participation of physicians and dentists; agreements with the local hospitals for uninsured care; discounts at local pharmacies; and commitment of other resources from health and human service agencies. The idea was marketed through the local Academy of Pediatrics, pediatric hospital staff meetings, and the local medical society. Their blessing on the program and participation was solicited in what was promoted as "our own community's response to the health problems of the low-income children of the Valley."

Both the public health and primary care initiators recognized that the Units of Practice had to include both the children and their families. Both also recognized that the Units of Solution, those other health and human service resources needed to care for the children, were accessible only through a planned community marketing effort.

This model of a coordinated effort focused on cooperative public-private partnership displays the value of community good will and professional peer pressure through highly defined networks. The program has now been recognized on a State and national basis and is one of the community-based, problem-solving health care demonstrations which the Kellogg Foundation supports for replication and dissemination in a number of communities in Virginia.

Dissemination Through Creating New State-Local Communications Channels: Virginia Cooperative Agreement Process

A second example of integration in action summarizes one attempt of the Virginia community and migrant health centers and local health departments to integrate primary care and public health services on behalf of medically underserved communities. This is a single point of integration model but is significant because it tracks the steps that lead from demonstration to dissemination.

If truly tested, many organizations with seemingly different purposes can collaboratively identify their common interests, establish common goals, and implement shared programs. What has been demonstrated by the Virginia Cooperative Agreement (adminstered by the Office of Health Planning and Regulatory Services of the Virginia Department of Health), particularly in the expansion of WIC services into remote CHC's sites, is the positive effect that environmental reinforcement has on planning integration efforts for community health problems. In this effort:

- The public health orientation of increased use of preventive nutrition services by at-risk pregnant women and small children was met;
- The primary care focus of offering supplemental services available in a more convenient source for patients who were eligible and needed them was accomplished; and
- The common mission became demonstrating to State officials that patient health status and the health district's capacity to serve additional nutrition at-risk patients was possible through collaboration.

As a matter of background, the U.S. Public Health Service (PHS) began providing funds in 1986 for States to pursue Cooperative Agreements with State health departments and State primary care associations to promote improved primary care services in the States' underserved areas. Three general areas of involvement were defined:

- Primary care planning to identify geographic and other access problems throughout the State;

- Manpower development activities to involve State resources and in easing the health professions shortages in underserved areas;

- Service integration efforts between primary care centers and public health efforts to improve communications and service linkages.

Virginia's service integration began with an approach involving health centers and health departments identifying and communicating common interests and goals. To avoid the inevitable appearance of "scrambling for scarce resources," a focus on patients, the usually low income, evolved as the Unit of Practice.

One essential feature of the Cooperative Agreement process was the introduction of a new Unit of Solution at the State level. New communications channels were created among four involved parties: local health departments, the VDH Cooperative Agreement office, CHC's and the Virginia Primary Care Association (VPCA). The other key component of the integration strategy was the promotion of positive reinforcement for innovations in CHC-LHD integrated efforts based on realistic organizational and community needs, values, and strategies.

Nationally, PHS support for the Cooperative Agreement process and State/Regional Primary Care Associations has represented a conscious effort to promote public health and primary care service integration dissemination. Funding of both organizations has enabled a new series of meetings and collaborative projects at both the State and local levels. One net effect has been to expose the Primary Care Association to local health departments and their district medical directors. Similar communications were created between the Office of Health Planning and Regulation and the Division of Family Health Services with individual health centers. This has helped local and State representatives to understand "the big picture" including history, structure, and regulations as promoting and restraining factors to local cooperation among primary care and public health actors.

The next three figures demonstrate the steps involved in a synergism which developed among the State and local parties through the Virginia Cooperative Agreement. One example of these dynamics is displayed: new integration of health and nutrition services offered by LHD's through the Women's Infants and Children Program in CHC's. The example displays three phases: Needs Assessment, Program Experimentation, and Program Dissemination.

In the case of the expansion of WIC services into CHC's which were geographically remote from LHD sites, the Cooperative Agreement used a special Service Integration Small Grant Program to spur collaborative demonstration proposals from two teams of CHC's and LHD's. This new model of service delivery based on patient needs and convenience was a one-year experiment which tendered successful results: more women and children were identified as eligible, provided services, and the CHC's and LHD's defined cooperative roles in helping the patients.

As a result of these local experiments, State health department officials were convinced that local cooperation was possible and effective in meeting State WIC Program goals. This example, as well as the ongoing positive pattern of cooperative relationships established through the Cooperative Agreement process, helped establish cooperation as an organizational norm. Thus with the support of the VDH and VPCA, State WIC officials made available support for additional local CHC-LHD WIC integration model projects. Once one program with positive local cooperation was promoted at the State health department level, other categorical programs began to perceive the value of these local interactions toward their program objectives. Finally, once the cooperative attitude toward public health departments within the primary care centers was generally established, association-wide norms promoted similar patterns of interactions among all centers. New CHC's in Virginia and existing LHD-CHC relationships became the Unit of Solution and the Cooperative Agreement process with its new communication synergism became the dissemination channel.

Dissemination Through Training Future Change Agents: Involving Training Programs in Promoting Integration

Another method to promote primary care and public health integration efforts lies in a simple idea. We can generally assume that the idea of promoting integration of public health and primary care principles is not a foremost agenda item in current health professions training institutions. Therefore students who remain uninitiated might be less willing to participate in integration efforts after entering practice because of a lack of familiarity with the purpose or importance of the need for integration. This sense can best be promoted through including exposure and involvement in practical and replicative integration efforts during the health professional training years.

In the interviews conducted with the preventive medicine physicians in preparing this paper, I inquired about information on current and potential methods for training an integrationist philosophy for our next cadre of public health and primary care physicians. I fear the responses leaned more toward potential rather than existing solutions. Among their recommendations were:

1. Teaching community medicine as part of family medicine in the medical school curriculum. This recommendation might become a more effective means of promoting integration if current efforts to alter reimbursement and

training program dollars from Federal and foundation sources actually result in an increased percentage of time which students are required or permitted to spend in primary care areas during their medical school careers.

2. Urging more contact between schools of public health with local communities. As one physician said, the schools have done a wonderful job in credentialing and standards but as academic institutions have fallen short in involvement with implementation of local public health programs.

3. Promote the adoption of national goals, such as stated in Healthy People 2000, as part of training programs. Efforts could focus on teaching students how these goals can be integrated into their future practices and their roles in helping to meet those national goals. Some sense of professional accountability and participating in addressing health outcomes, inherent in the national goals, should be included.

4. Develop model training opportunities within public health systems that would demonstrate how public health really works. Part of this effort would require additional time in epidemiology, cost-effectiveness of basic health care interventions, and exposure to public health role models. This should not simply be time seeing patients in a public health clinic. It should emphasize not just the "medical problem outcome" but also the "health issue etiology" involved with such traditional services as lead poisoning, immunizations, and environmental and occupational health problems.

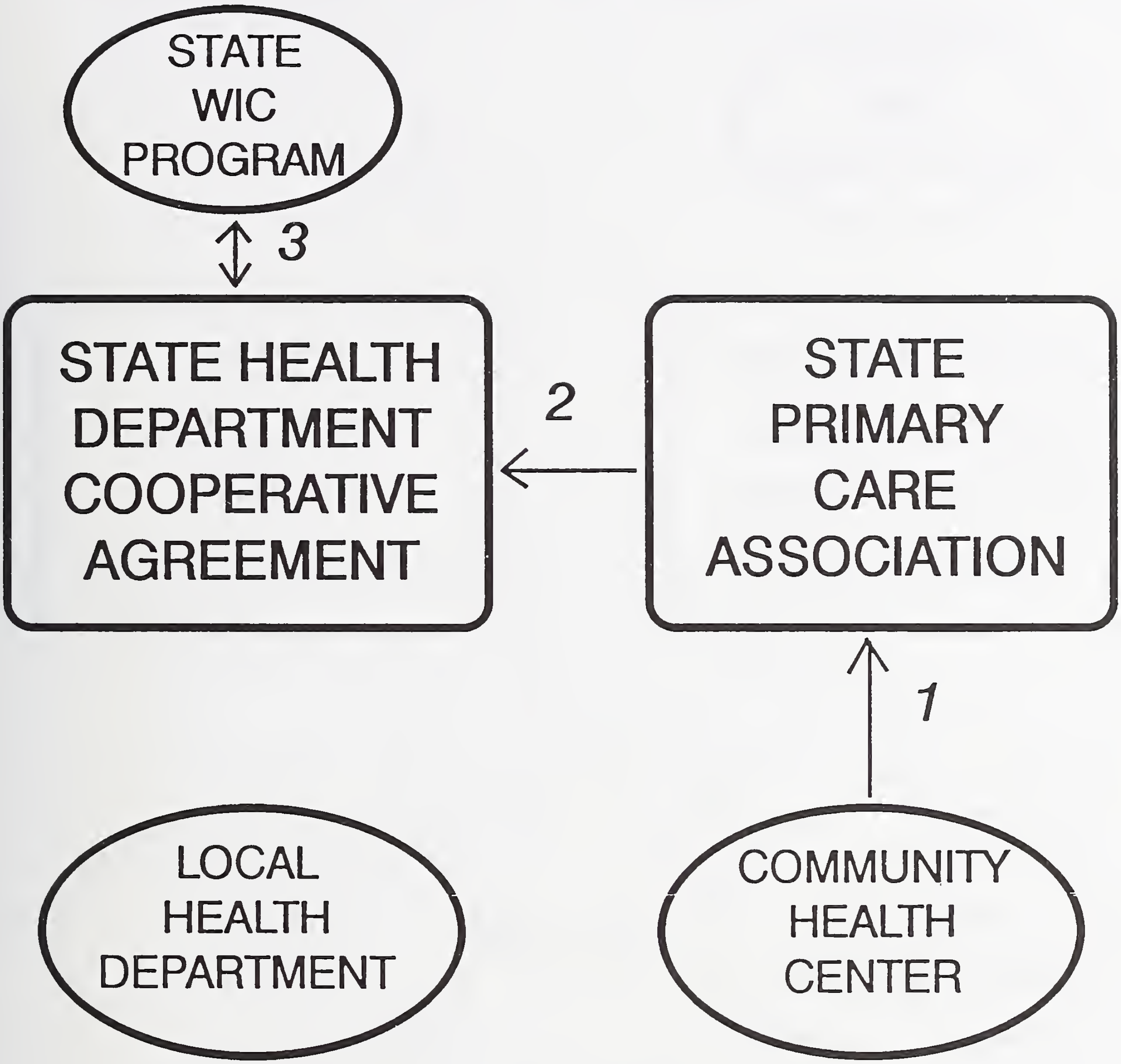
A proposal to actuate some of this philosophy using health professions students and the Unit of Solution comes from the Virginia Primary Care Association. As part of the effort to develop a Statewide Area Health Education Centers Program (recently funded by the Bureau of Health Professions of the U.S. Public Health Service), the Association charged numerous work groups which included primary care practitioners from CHCs and representatives from public health and training programs to focus on the Training of Family Medicine Residents and Training in Health Education. Both are services required by the AHEC legislation.

Residency Review Requirements for Family Practice call for a one- or two-month training rotation in Community Medicine. Several instructional areas must be fulfilled. These are remarkably similar to the core of Preventive Medicine principles: occupational health, community health resources, epidemiology, public health services, school health, community health education, and environmental health.

The work group recommendations envisioned the Unit of Practice to be model community health center-local health department experiences that demonstrate existing and workable public health and primary care intervention programs. They could use either approach to integration: the single point of service or the coordinated and focused cooperative model.

FIGURE 4

NEEDS ASSESSMENT PHASE

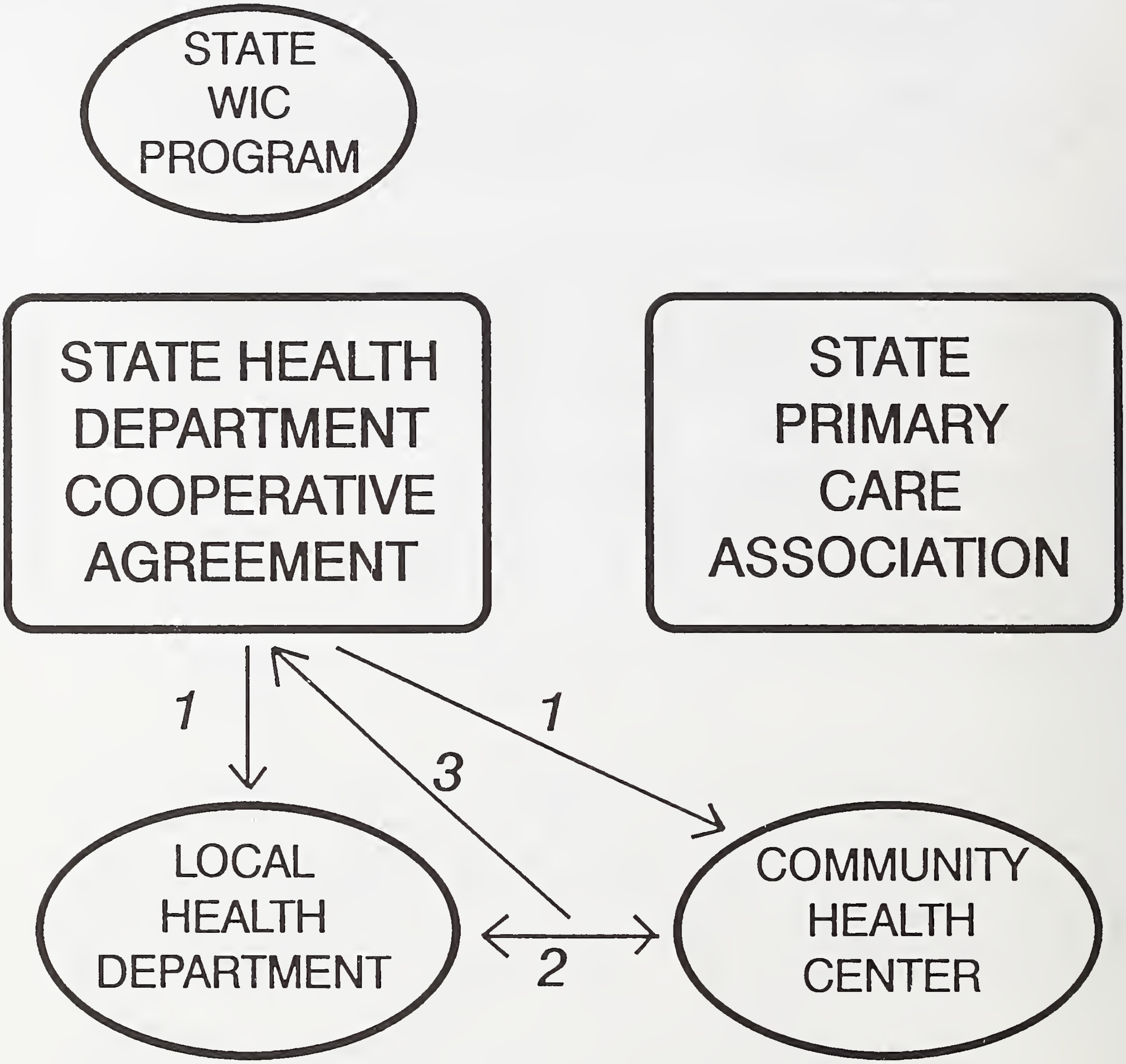

STATE WIC PROGRAM
3
STATE HEALTH DEPARTMENT COOPERATIVE AGREEMENT
2
STATE PRIMARY CARE ASSOCIATION
1
LOCAL HEALTH DEPARTMENT
COMMUNITY HEALTH CENTER

NEEDS ASSESSMENT

1--CHC contact with SPCA about continuity of care issues around WIC eligibles.
2--SPCA-COOP AG discussion on Services Integration agenda.
3--COOP AG-WIC identify administrative regulations, capacity issues and intent to demonstrate.

FIGURE 5

PROGRAM EXPERIMENTATION PHASE

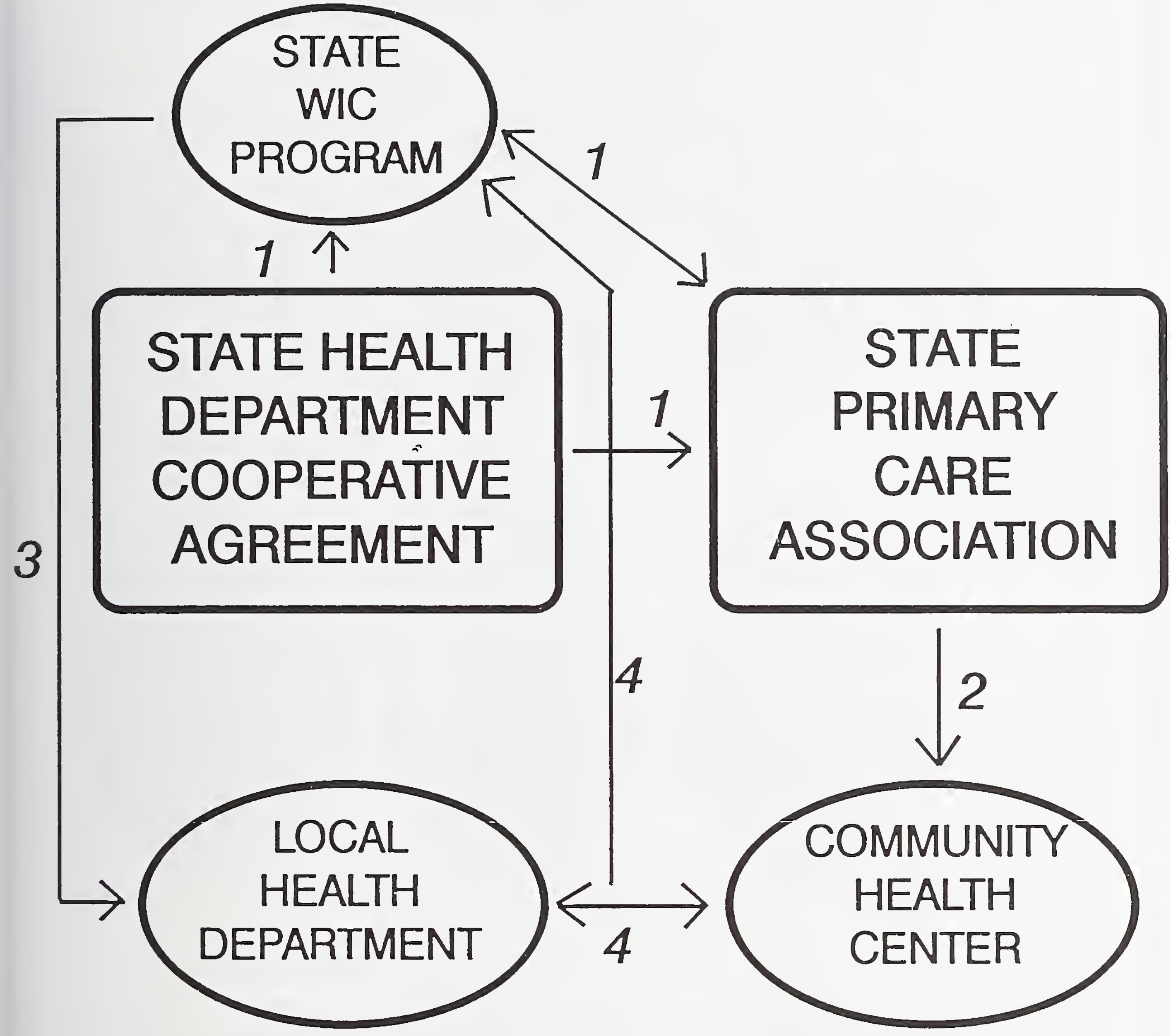

STATE WIC PROGRAM
STATE HEALTH DEPARTMENT COOPERATIVE AGREEMENT
STATE PRIMARY CARE ASSOCIATION
1
1
3
LOCAL HEALTH DEPARTMENT
2
COMMUNITY HEALTH CENTER

PROGRAM EXPERIMENTATION

1--COOP AG release request for proposals to LHD-CHC teams.
2--Proposal development for LHD-WIC workers on site at CHCs.
3--Tracking and reporting progress and utilization to COOP AG and WIC.

FIGURE 6

PROGRAM DISSEMINATION PHASE


STATE WIC PROGRAM
1
1
STATE HEALTH DEPARTMENT COOPERATIVE AGREEMENT
1
STATE PRIMARY CARE ASSOCIATION
3
4
2
LOCAL HEALTH DEPARTMENT
4
COMMUNITY HEALTH CENTER

PROGRAM DISSEMINATION

1--Analysis of experiment by SPCA, COOP AG and WIC. Agreement for CHC Statewide set aside.

2--WIC Involvement Models by SPCA to CHCs to organize efforts.

3--WIC notice to LHD of Statewide effort urging cooperation and involvement.

4--Submission of cooperative plans to WIC to secure administrative funds and additional WIC slots.

FIGURE 7

THREE EXAMPLES USING THE INTEGRATION MODEL

UNIT OF PRACTICE		*UNIT OF SOLUTION*
Uninsured children and their families	***ROANOKE CHIP PROGRAM***	Physician professional and human service agency networks
Local health departments and community health center collaborations	***VIRGINIA COOPERATIVE AGREEMENT***	New state level communication channels among primary care and public health
Training experiences in integrated primary care/ public health projects	***HEALTH PROFESSIONS TRAINING PROGRAMS***	Health professions students

The second work group defined a basic set of recommended health education and health promotion theories and training experiences that health professional students should have. These included a familiarity to the variety of professional types that work in communities (case management coordinators, health educators, social workers, and nutritionists) and exposure to health education activities using the different units of practice (individual patient education, working with families and other support groups and community education campaigns). Further they defined those basic education theories and principles with which all students should become familiar. These included: medical compliance and mutual goal setting, assessment skills and motivation theory, principles of adult learning, communications skills for health professionals, the health locus of control, and health belief models.

Our philosophy in this work was simple: show programs as part of the training curriculum (the Unit of Practice) which are interesting and act as role models for our future practitioners (the Unit of Solution). In turn, we hope that the new professionals will emulate these efforts once they establish themselves in practice. The basic ideal goes even deeper however: every family physician (and preferably every primary care physician and ultimately every physician) should have exposure to and involvement in an experience that will promote knowledge of and a sense of responsibility for involvement in public health practice. We should establish this as a norm in the training and practice for all future physicians and other health professionals.

Points on the Dissemination of Integration Models

Given the breadth of these three examples, two questions beg further consideration. First, are there any "rules" about creating the linkages needed to affect integration. Second, what factors promote or restrain new ideas or innovations from successful dissemination?

Experiences throughout Virginia have identified some basic principles of interorganizational linkage. Although some characteristics of the primary care and public health systems and their providers may vary by State, the arguments for collaboration remain the same:

- Spreading the resources

  In today's environment of doing more with less, posing integration of services as a means of partnership to reduce overlapping efforts and serve more patients, families, and communities is almost a promotional "must."

- Accomplishing mutual goals: creating win-win situations

  Since both primary care and public health professionals have an implicit sense of accountability as members of the health care system, creating a public sense of cooperation rather than competition will promote a positive image for both types of actors. Further, this image can enhance both organizations' legitimacy in public advocacy and legislation on behalf of public health and primary care services.

- Emphasizing the COMMUNITY as a unit of practice

  If the sense that health status or care is truly a community issue, then the investment of multiple organizational and professional types in defining its solution is important. Through a community-based linkage development strategy, both primary care and public health advocates should become natural partners. This will lead to more active integration of efforts.

Given these basic principles, we can turn to the literature around diffusion of innovations for some helpful clues in designing dissemination efforts. Every type of innovation, like the idea of integrating primary care and public health, carries with it its own set of characteristics that affect its chances for dissemination and adoption. Below is a review of some of the more salient characteristics.

1. Relative advantage

   Potential adopters must see the new way, that is, integrating public health and primary care activities, as better than current operating procedure. In working with two groups that view health problems and Units of Practice from a somewhat vantage point, objective advantages may in fact be few. However, the perception of change itself, or a new approach, or gaining some status, or community support for adopting the new integrationist thinking may be enough to assist in adoption. As the old adage goes, beauty is in the eye of the beholder.

2. Cost

   Promoters of integration must be clear about how the true extra economic costs of integration will be covered. Not much progress has been made in the indemnity insurance market or with broad-based business support for wellness and prevention reimbursement. Both the apparent and hidden costs of adoption must be identified. The potential for an identity crisis is a real potential cost. If for years health providers have attempted to differentiate themselves to gain some competitive advantage, convincing them of a "common mission" and the inherent correctness of focusing on Units of Solution versus their own practice may have a significant cost in terms of their own identity.

3. Trialability

   To what degree can involvement be experimented on a limited basis? Too much change is usually difficult to bring about. Therefore incrementalist approaches that allow for partial adoption or involvement or involvement of fewer actors at first might be more successful.

4. Observability

   Although acceptance of deferred gratification seems to be an inherent strength of public health professionals, acute care patient demands tend to narrow the primary care practice's world view. Therefore, integration between the two groups needs to focus on patient care or prevention processes or results that can be seen fairly immediately.

5. Systems Effects

   Overall this may be the most important characteristic promoting or restraining dissemination of primary care-public health integrated efforts. The relationship between the American public and its health care system has grown jaundiced during the past decade. We almost expect modern medical machines and drugs to save us from any illness, clean our arteries much like detergent gasoline does our car engines, and, if unexpected outcomes occur, to sue everyone involved. We all know where greater dependence on high-tech medicine has led us as a Nation. However the cost crunch of middle class rising deductibles and out-of-pocket expenditures are leading the way to force our elected officials to face the true dilemma of the 1990's: reforming the health care system.

All of us in the health care field will feel future systems effects. My own guess is that solutions will almost predictably begin to focus on prevention principles as espoused in the integration of public health and primary care practice. The norms of our system, so long bent toward intervening only after sickness has begun, will slowly shift to the less costly prevention ethic.

Health care providers and consumers will become partners in this future system. Accountability for the use of public and private funds will stress health outcomes, not procedures. And once this becomes a clear system norm, this speech about integration of public health and primary care will not appear on future national conference agendas as an session choice, but as the major theme.

How the Preponderance of Subspecialists Affect the Cost, Quality, and Accessibility of Health Care

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Beginning 25 years ago with the Millis Report,[1] there has been a health policy consensus that the American health care system was becoming inordinately dominated by specialty medicine. Despite calls for major reform of medical school curricula, residency training programs, and physician reimbursement policy, and government initiatives to encourage the training and placement of primary care physicians,[2,3] the domination of the system by specialists and subspecialists now is at an unprecedented level. (Unless specifically noted, this paper will use the terms specialist and subspecialist interchangeably.)

By every important criterion, the shift of the system toward specialty domination is increasing. In 1990, only 34 percent of active physicians practiced in the four fields generally considered to be the primary care specialties: general practice, family practice, general internal medicine, and general pediatrics.[4] In comparison, nearly 25 years earlier, the first American Medical Association periodic survey in 1966 revealed that 36 percent of private physicians were in general practice alone. Another 18 percent were internists and pediatricians.[5] Accounting for the fact that an unspecified number of these earlier physicians were subspecialists, it seems reasonable to conclude that in 25 years the proportion of actively practicing generalist physicians in the United States has dropped from one-half to one-third.

Based on current trends, the future specialty distribution will be even more skewed toward specialists. The graduation questionnaire of the Association of American Medical Colleges demonstrates that interest in primary care has fallen from 36 percent of graduates in 1982 to 22 percent in 1989.[6] In 1991, 1,367 fewer medical school graduates (19 percent) entered residency programs in the primary care disciplines than in 1986. For the specialty of internal medicine, the number of medical school graduates who matched in an internal medicine residency program decreased 27 percent in just seven years.[7] But even these trends overstate the number of prospective primary care physicians--in a recent survey only 31 percent of those who selected an internal medicine residency and 61 percent who chose a pediatrics residency planned to practice as generalists; the rest anticipated careers as subspecialists.[8] Through the decade of the 1980's the move away from primary care has accelerated.[9] Based on the data trends, Colwill expects fewer than 20 percent of today's graduates will pursue careers in primary care.[6]

A number of reasons for the move away from careers in the generalist specialties have been advanced. One of the major determinants of specialty choice is relative income. Here, the specialties clearly dominate. There appears to be good correlation between the competitiveness of specialties in terms of residency match rates and specialty income.[10,11] The Institute of Medicine in its *A Manpower Policy for Primary Health Care* recommended that "Third-party payors (federal, state, and private) should reduce the differentials in payment levels between primary care procedures and non-primary care procedures."[12] Based on similar calls from primary care physicians themselves,[13] the decade of the 1980's witnessed a protracted debate between advocates of so-called cognitive services and procedure-oriented specialists.

In the end, Medicare has revised its payment system to shift reimbursement somewhat to better compensate evaluation and management (EM) services, and by extension, the generalist physicians whose practices consist mostly of providing these EM services. However, the new Medicare relative work unit-based fee schedule and its implementation procedures represented a compromise among the various specialties, resulting in an attenuated shift in reimbursement rates.[14] More importantly, the Medicare shift has not been adopted by private sector payers. Indeed, unless faced with one of the relatively few well-positioned managed care organizations with market clout to implement altered reimbursement systems, specialist physicians have been able to cost-shift onto private payers reduced payments from Medicare.[14]

Furthermore, the modest shift in Medicare pricing policy may be insufficient to counter utilization shifts to specialty care. In a recent study examining the sources of growth in Medicare part B expenditures, Berenson and Holahan demonstrated that services involving the use of relatively new technologies were fueling the 12.3 percent average annual growth rate in Part B physician expenditures between 1984 and 1988.[15] Prominent among these service categories were endoscopies, ophthalmologic procedures, sonographies and advanced imaging procedures (computed tomography and magnetic resonance imaging). Corresponding to this proliferation of technology use, the four-year growth in total Medicare-allowed charges for physician services was unevenly spread across specialties. In the four-year study period, general and family physicians and internists had small nominal growth in their overall allowed charges. Other medical subspecialists, including cardiologists and gastroenterologists, saw much higher rates of growth, far exceeding the overall growth rate. Even within the surgical specialties, general surgeons barely grew at the rate of increase in enrollment and reimbursement rates, whereas surgical subspecialists, particularly ophthalmologists, had considerably higher rates of increase. Thus, even though the new RBRVS-based fee schedule will shift unit reimbursement prices, the massive increase in utilization of specialty-controlled technologies may, in fact, continue to shift upwards the proportion of Medicare expenditures that goes to specialists.

Disparities in incomes between the primary care physicians and specialists continue to increase unabated.[16] In 1989, the median income of all physicians was $125,000. However, whereas the medians for general/family physicians and pediatricians were $90,000 and $93,000, respectively, surgeons, radiologists, and anesthesiologists tied for the lead median income of $180,000. The median for the category of internists, which includes generalists and subspecialists, was $120,000.

The earnings dominance by specialists is more striking when the trends of mean incomes are considered. Table 1 combines data from two AMA reports based on data collected by the AMA Socioeconomic Monitoring System.[16,17] Over the most recent 15-year period for which data are available, the annual increase in mean earnings by specialists was about 2.5 times greater than the increase for the primary care fields. Again, the increase for internists combines larger increases for subspecialists and smaller increases for generalists. Put another way, during the period that the perceived shortage of primary care physicians was receiving policy attention, the average earnings of primary care physicians increased at a rate lower than inflation, whereas the earnings increase for specialists approached or exceeded two times the increase in the Consumer Price Index.

Another measure of the effect of specialty domination of the health care system is the pervasive presence of the subspecialty orientation of medical education in most medical schools and in many residency training programs. While there are many influences on specialty choice by medical students,[18] it seems clear that the medical school experience has a major determinative impact on specialty preference.[19] In particular, the traditional, hospital-based medical clerkship seems to be a negative experience for many medical students who had planned a career in general medicine.[20] In contrast, the relatively few students exposed to outpatient rotations were positively disposed to a career in internal medicine. Similarly, the heavily dominated hospital orientation of traditional internal medicine residency programs appears to influence residents to select subspecialty fellowships, in lieu of a career as a general internist.[21,22] To some extent the experience of residency leads to decreased interest in general medicine which is perceived as a dumping ground for difficult patients, including those with progressive chronic illnesses, psychosocial conflicts, and unhealthy behaviors.[7] In contrast, subspecialty care is on the cutting edge of medical science and accorded greater prestige by the medical profession and the public.[23,24]

In 1980, Beeson had predicted a decline in subspecialty care because its content of technology represented too much science and too little patient caring.[25] After the decade of the 1980's, it appears the exact opposite has occurred. Petersdorf describes the "Rodney Daingerfield syndrome," i.e., the generalist specialties get no respect.[22] Most of the major medical advances of the past few decades involve scientific breakthroughs and the application of revolutionary technologies for specific disease processes falling within recognized subspecialty disciplines.[23] The enormous growth of biomedical knowledge may make it unrealistic for generalist physicians to have precise information and skills across many organ systems.[26] In most metropolitan areas, generalist physicians now practice within the shadow of available specialists who have more substantive knowledge about the relevant disease process under consideration and more concentrated diagnostic and therapeutic skills. At the same time, the American public's infatuation with experts and new technology applies a subtle and sometimes overt pressure on generalists to refer to specialists and defer to their judgment. A complementary factor is potential medical negligence litigation. The cautious "defensive medicine" response to threats of liability is referral. Indeed, medical malpractice risk managers explicitly advise generalists: when in any doubt, refer.

The sum of these various social and scientific factors is that many medical communities, dominated by specialists, adopt a reductionist view of medical care, viewing the dysfunction of an organ system as the exclusive domain of the local subspecialists in that field.[26] Hospital staff policy and reliance on malpractice testimony by specialist experts reflect this movement to the primacy of specialist opinion. The result is that the generalist's self-esteem often suffers. A generation ago, generalist internists were considered the "best and the brightest" medical school graduates. Now, these former expert diagnosticians often find themselves inadequately prepared for many common tasks and responsibilities.[26]

In surveys, physicians do not identify their apparent loss of self-esteem, citing other changes in their practice environment which leads to professional dissatisfaction. In a recent large survey of internists, major concerns cited are the administrative burdens of practice, the threat of malpractice litigation, loss of income, and loss of clinical autonomy.[27] Only 39 percent of internists would once again pursue such a career. Of note, in this survey the degree of satisfaction and dissatisfaction with elements of practice were similar for generalists and subspecialists. A different survey for the Johnson Foundation of physicians mostly 40 years or younger, finds that on questions related to satisfaction with medical practice, doubts about medicine as a career, and the likelihood of leaving practice, specialists who provide no primary care services were somewhat more positive in their responses than physicians, both generalists and specialists, who provide primary care all or part of their time.[28] The important variable seems to be, not whether physicians are specialists, but rather, whether physicians provide primary care in addition to specialized services. As discussed later, this finding has ominous implications for the theory that specialists fill the vacuum left by a decrease in the proportion of pure generalist physicians.

In summary, the American health care system inexorably has become dominated by a specialty orientation. Despite efforts by many parties to shift the system toward primary care and generalism, by virtually all important policy parameters, the last decade has seen a continued shift of the system toward a specialty care orientation. The proportion of generalists are fewer today and will diminish even more in the future. A smaller share of the health care dollar is spent for generalist care and, correspondingly, the relative incomes of generalists are declining. While the entire medical profession feels beleaguered, physicians practicing primary care seem to feel most pressed. Their self-esteem and confidence is decreasing.

There seems little question that these developments reflect a major problem for primary care physicians. It does not necessarily follow that the public is not well served when generalist physicians are feeling squeezed. It may be that the pervasive shift toward specialty care broadly reflects the public's desires for how health care services should be dispersed. It may be that the diminution of the role of the generalist in medicine reflects the move toward specialization in society in general--and, more specifically, that the public demands care from specialists.[29] Perhaps generalists were practicing beyond their level of competence. Put more positively, because specialists generally receive the same training as generalists and then master their specialty, the public may be as well served by care provided predominantly by specialists as by generalists.[23,30,31]

Access

Whether the disproportionate mix of generalists and specialists poses a health delivery problem is usually discussed first in terms of access to care for those people residing in underserved rural and inner city areas. It is theoretically correct that specialists need a population base sufficient to practice their specialty.[29,32] The data support the theory that specialists would not locate in small cities and most rural areas.[33] Family physicians seem to be the only group that preferentially locate their practices in nonmetropolitan areas.[34] However, some family physicians and other primary care physicians are closing their practices in economically depressed rural areas and even relatively well-off nonmetropolitan communities because of increasing financial pressures.[35,36] Because older physicians are disproportionately distributed in rural areas, there is concern that older physicians in these areas will leave their practices during the next decade without being replaced.[32,34]

Nevertheless, it has been argued that market pressures force specialists to distribute more widely than they might otherwise choose[37,38] and, importantly, that these physicians provide a "hidden system" for delivering generalist care to the populations they serve.[39,40,41] The dispersion of physicians to less popular practice locations has occurred, although perhaps not to the degree that had been projected in the early 1980's.[34] Between 1975 and 1985 the number of physicians in rural areas increased 52 percent.[42] Putting all the trends together, Kletke et al project that access to physician services is likely to increase in the near future.[34]

Particularly in the early 1980's, there was an ongoing policy debate over the extent and nature of the "generalist" care provided by specialists. Mendenhall et al developed a classification system for types of patient care, more detailed than by a simple dichotomy of "primary/nonprimary."[43] They define one of the five categories of services as "principal care," defined as the care provided by a physician when the physician considers the patient to be a regular patient and when the physician believes he or she provides the majority of care to the patient. The authors consider this definition to encompass oft-cited criteria for primary care--access, continuity, and comprehensiveness. Using this definition, the authors found that doctors in almost all internal medicine subspecialties provide large percentages of principal care. In fact, medical oncologists and nephrologists were found to provide even more principal care than general internists.

Using the same classification system on a nationwide sample of more than 10,000 physicians, Aiken et al found physicians in many specialties provide substantial amounts of principal care to a large portion of their patients, thus serving as the hidden supply of primary care in the Nation.[41] They concluded specialists serve as primary care physicians for nearly 20 percent of the population. Importantly, the authors do not claim that the hidden supply of primary care is necessarily desirable on the basis of cost or quality considerations.

Spiegel and colleagues critiqued the Mendenhall definition of principal care as a reliable indicator of the components of primary care.[44] They developed three alternative definitions of primary care: first, the physician who delivered the majority of care; second, the physician designated by the patient to receive results of multiphasic-screening examinations; and, third, the physician who treated common problems. Their majority of care definition was based on actual numbers of visits based on claims, not based on physician perceptions of their contribution to their patients' care; physicians have been shown to overestimate the extent of care they provide to patients.[45] Using the alternative definitions, the study showed that specialists were primary care physicians for 34 percent, 12 percent, and 9 percent of patients, respectively. The authors conclude there is a difference between patients' perceptions of the physicians they see for a specific medical problem within a specialist's domain and those they see for the tasks associated with primary care, including medical care for common problems and health maintenance. Other data support the notion that, while specialists may provide ongoing regular care to patients, they offer little primary care involved with health maintenance.[46]

Most of the debate on access has focused on the availability of different types of physicians to provide different types of care. Utilization of service rates can also inform the discussion on access. Data from the International Collaborative Study of Medical Care Utilization, published in 1976, shows that areas with more physicians, more specialists, and higher specialist/generalist ratios have higher rates of physician visits.[3]

More recently, using a very large data base Holahan et al studied large area variations in performance of 20 high frequency Medicare procedures, including evaluation and management services, services performed by generalists and specialists, e.g., electrocardiograms, and procedures performed only by specific specialties, e.g., total hip replacements.[47] The data demonstrated that utilization variations across large geographic areas are quite large for the common procedures studied. Multivariate regression techniques were used to control for a large number of variables that might explain area variations in utilization rates. These variables included: age, race, sex, disability, mortality rates, area malpractice rates, ratio of housestaff to population (a measure of teaching hospital capacity), Medicare assignment rates, proportion of area elderly population with supplemental insurance, area income per capita, an index of area physician practice costs, geographic area, the ratio of specialist to population for the specialist most likely to perform the studied procedure, and the ratio of general practitioners to area population. The regressions demonstrated that, after the large number of variables are controlled for, there still appears to be a great deal of unexplained variation. However, the most important explanatory variable was the number of specialists per capita. The specialty supply variable was positive and statistically significant in 15 of the 20 equations, implying that access to a range of services increases with an increase in specialist supply. That is, there are quite different levels of medical care use across areas, depending upon the availability of specialists, whether because of patient need or physician induced demand. Interestingly, the availability of general practitioners as an independent variable was negatively related to use of a few services. More generally, it was not an explanatory variable.

In summary, with regard to patient access to care, it seems clear that the presence of specialists results in provision of more services, particularly services likely to be performed by specialists. Unsettled is the extent to which specialists provide the type of primary care that has traditionally been considered within the domain of generalist physicians, such as health maintenance, treatment for common problems, and coordination and continuity of care.

The identified hidden system of generalist care now may be in the process of changing. Some suggest that medical subspecialists, in particular, are becoming more reluctant to assume responsibility as general physician for patients whose major medical problems fall within their subspecialties and are explicitly rejecting opportunities to take over ongoing care responsibilities from retiring generalist physicians.[48] Because some managed care organizations preclude specialists from practicing primary care, some specialists may voluntarily extend that limitation to the rest of their practice, although pure economic considerations would suggest that specialists would attempt to increase their primary care activities in a competitive environment. It is likely that the various factors result in some specialist physicians declining any additional primary care role, while others attempt to expand into primary care to supplement their subspecialty practice.

Cost and Quality

Unfortunately, the literature that compares the cost and quality of services provided by various kinds of generalist and specialist physicians is limited and inconclusive.[49] The relevant health services research often has been conducted in atypical or idiosyncratic settings, has used inappropriate utilization proxies for costs, has measured quality by nonvalidated process criteria rather than by outcomes, and, generally, has been limited by study design, such as heterogeneity of patients, diagnoses, and specialties studied; insufficient sample size; and inability to control for severity of illness.[50] For the most part, the research has looked at episodes of illness for medical problems or diseases that are commonly managed by generalists and specific specialists. Focusing on episodes of illness, such as hospitalizations or ambulatory visits, the research has generally avoided a consideration of cost over a period of time.[51] Missing from most studies have been satisfactory efforts to control for case-mix variations across specialties. Tarlov et al found significant differences in complexity of cases seen by family physicians, general internists and various subspecialists for a series of common conditions.[52] More recently, Kravitz and colleagues, as part of the Medical Outcomes Study, found case-mix severity for certain cardiovascular diagnoses varies by the degree of specialization of the caring physician.[53] This study confirms the need to adjust for case-mix in studies comparing cost and quality across systems of care or specialties.

Aside from methodological issues, the research has not been relevant to some of the issues related to concentration of generalists versus specialists that have been raised:

- One of the main concerns about specialty excess is that quality of care suffers when specialists have insufficient patient volume to be exposed to complex disorders or to hone their specialty skills and judgment.[54,55] Research comparing the costs and quality of pure specialty care provided in areas with different relative concentrations of specialists has not been performed.

- The Institute of Medicine defined primary care to encompass "accessibility, comprehensiveness, coordination, continuity, and accountability."[12] However, there has been little attention to comparing the performance of generalists and specialists on these components of primary care, even though some argue that medical subspecialists may, in fact, not be competent generalists.[22] For example, there have only been a few studies looking at the comparative performance of specialists and generalists is promoting health maintenance, a measure of comprehensiveness and continuity. Also missing have been studies comparing cost and quality of treating patients with multiple, possibly interacting, chronic medical problems such as arthritis, diabetes, hypertension, coronary artery disease, and renal failure. This patient population, while relatively small in number, consumes a disproportionate amount of health care expenditures. While the methodology for such studies would be formidable, an exploration of this area would shed light on the physician role in coordination and continuity of care. The existing studies compare generalist and specialist performance for single chronic illnesses.

Some of the literature, particularly from the 1970's and early 1980's, focused on the differential impact of the then emerging field of family medicine, compared to the traditional disciplines of pediatrics and internal medicine, and later, of the development of primary care tracts within internal medicine and pediatrics, again in comparison to family practice. Currently, health policy tends to view family practice and primary care pediatrics and internal medicine as more similar than different, certainly in contrast to specialty disciplines based on organ systems.[56,57,58,59] A recent survey demonstrated that the clinical characteristics of patients seen within adult age groups by general internists and family physicians were quite similar.[60] With all of the primary care specialties in decline, the literature analyzing cost and quality differences among the primary care specialties loses much of its relevance.

In short, the recent literature generally finds that for ambulatory care, family physicians and general practitioners spend less time with patients and order fewer tests per visit than general internists and pediatricians.[61-70] On these same measures, recently trained family medicine graduates fall between general practitioners and general internists.[71] However, there is evidence that family physicians see patients more often than internists, largely offsetting their lower per visit charges.[51] Comparisons between family physicians and general internists in caring for hospitalized patients are fewer. In general, there is little or no difference in hospital charges or immediate clinical outcomes between the two groups.[72-76] These studies are hampered by the lack of case-mix adjustment and their performance in teaching hospitals with reliance on housestaff for clinical decisions.

More relevant is the literature comparing generalists' and specialists' cognitive skills and their performances in treating common medical problems. In a study of the knowledge base of internists who had been board-certified an average 7.6 years earlier, general internists received higher scores than subspecialists, and general internists practicing in small towns achieved higher scores than those in larger communities, consistent with the hypothesis that exposure to patients with a broader array of clinical problems permits a physician to maintain his or her knowledge base.[77] However, the differences in performance attributable to specialty status and practice locations were relatively small.

Comparisons of the cost and quality patterns of internal medicine generalists and subspecialists for common problems have uncovered no surprising findings. Studying the effect of specialization on care of patients with chronic obstructive lung disease (COPD), Strauss et al found no differences at one year in costs or clinical outcomes for patients whose personal physicians were pulmonary specialists, internists, or family physicians.[50] Mendenhall et al examined the complexity of care provided by various types of physicians.[65] For the condition with the most significant difference, the authors found that pulmonary subspecialists provide much more complex services and use more complex therapeutic regimens for patients with COPD than generalist physicians. However, "the magnitude of physician response differences narrows sharply following... a control for patient-problem characteristics." In other words, the increased complexity appears largely explained by case-mix.

Studying asthma, Engel and colleagues did attempt to control for case-mix. They found that allergists were significantly more likely to use oral corticosteroids and corticosteroid inhalers as part of asthma management than pediatricians and family physicians.[78] Greenwald et al found certain utilization differences for outpatient treatment of common conditions.[79] For example, cardiologists and internists spend more time per encounter with patients with ischemic heart disease and hypertension than family practitioners. Cardiologists prescribe fewer systemic drugs and perform more electrocardiograms than internists and family physicians. These specialty differences, while statistically significant, were small.

Greenfield et al, reporting from the Medical Outcomes Study, found that differences in patient mix explain a substantial part of the differences in utilization rates across specialties.[80] Nevertheless, after adjusting for case mix, they found that general internists had utilization rates for most indicators that were slightly higher than family physicians. In contrast, cardiologists and endocrinologists had utilization rates that were considerably higher than both types of generalists. Utilization indicators included measures of hospitalization rates, office visit rates, prescriptions, common diagnostic tests and procedures. The authors carefully note that although varying patterns of utilization emerged from the results, the study does not provide an overall estimate of annual per capita costs or of the health benefits of the differential utilization rates. Bernard and colleagues found that attending physician subspecialization had no effect on hospital DRG length of stay.[81] The study took place in a teaching hospital where the actual care was provided by the housestaff, muting the impact of attending physician specialty.

Rhee et al found that when general practitioners, most of whom were not board certified, practiced in clinical areas generally handled by specialists, their quality of care was not as good as that of the specialists.[82] Similarly, specialists practicing outside their own specialty areas had a relative reduction in their quality. This study, was based on explicit process criteria established by specialists, not on outcomes, and is dated. There are other studies which demonstrate that primary care physicians score lower than specialists when their performance is reviewed by specialists. Whether health outcomes or overall costs are affected by suboptimal performance based on process of care review was not tested. For example, McCarthy et al found that faculty internists correctly diagnosed only 60 percent of simulated cases of various common dermatologic presentations.[83] In the 40 percent of incorrectly diagnosed cases, the internists would have failed to refer and the majority of these cases were considered inappropriately treated. Of referrals deemed appropriate by an expert panel of dermatologists, only 62 percent were made. Conversely, 33 percent of referrals were considered unnecessary by the reviewing dermatologists. In a recent study by Geller et al looking at an intermediate outcome, the diagnosis of malignant melanoma, patients reported extensive contact with their regular physicians in the year prior to diagnosis. However, most of these persons neither received skin examinations nor examined their own skin during that time. Only 25 percent of the melanomas were first discovered by physicians, even though many patients had had visits from their regular doctors for routine physical examinations.[84]

Continuity and coordination of care are important components of quality and have been associated with lower costs of care.[85] Even without a formal gatekeeper role, fee-for-service primary physicians manage a large percentage of care that they may not directly provide.[86] Exploring the issue of continuity, Goldberg and Dietrich found that medical subspecialists afforded their primary care patients a level of continuity equal to that provided by family physicians and general internists.[87] The number of physicians studied was very small.

There has been recent interest in the comparative performance of generalists and specialists in health promotion and disease prevention activities. Schwartz et al surveyed 2,610 members of the American College of Physicians to ask about their usual preventive service and counseling practices.[88] They found that internists used effective preventive practices less frequently and ineffective practices more frequently than experts recommend. Regression analysis revealed that younger physicians and general internal medicine practice were most strongly associated with more appropriate use of desirable health maintenance activities. Subspecialists exhibited better performance only for those practices directly related to their subspecialty. However, even for health prevention practices related to their own subspecialty, subspecialists' level of appropriate use was not as high as that of general internists. Earlier, in contrast, Dietrich and Goldberg had found no difference between generalists and specialists in providing preventive care--both groups provided only 49 percent of recommended preventive services.[89] Differences within each physician group, apparently related to beliefs and practice habits, far exceeded the differences between groups.

Focusing only on counseling practices about smoking, exercise, weight control, and alcohol use, Lewis et al found that specialty was the most significant predictor of desired counseling activities.[90] Surgeons and obstetricians-gynecologists counseled fewer patients and less intensively than generalist physicians, consistent with the view that counseling patients about health habits is viewed as the responsibility of a patient's primary care physician. Whether there were counseling differences between general internists and subspecialty internists was not explored. Finally, Tietelbaum et al surveyed Maryland physicians to determine the congruence between physicians' recommendations and women's Papanicolaou (Pap) testing behavior.[91] The majority of internists, family physicians, and gynecologists recommended annual Pap tests for all their female patients. However, gynecologists were more likely than the other specialties to recommend annual Pap tests and to send reminder postcards than the generalist physicians, particularly for older patients. Older age was related to less frequent Pap testing, while having a visit with a gynecologist was related to increased frequency.

Overall, the available health services research comparing generalist and specialist on cost and quality grounds for managing common problems and providing health maintenance services does not suggest important differences. Where differences are found, they do not appear major. Specialists may provide a more costly mix of services, but case-mix likely explains part of that difference. Outcomes in terms of mortality do not appear to differ, but variations in health status are unexplored. Specialists perform better on quality process criteria developed by specialists, but any relation to clinical outcomes is unknown. Generalists may do somewhat better at health maintenance activities, at least for services that fall outside of the specialists' clinical domain. More striking was the finding that neither generalists nor specialists do particularly well at health promotion and prevention activities.

A different line of argument about the cost and quality of specialist domination of the health care system derives not from discrete health services research studies, but rather from macro-level policy analysis relevant to the organization of the health system as a whole. The Medicare Part B data analysis cited earlier lends credence to the argument that specialists generate higher health care costs than generalists.[15] The physician services increasing fastest are those involving the use of technologies, such as endoscopy and imaging, which are used predominantly by specialists. Theoretically, specialists in many clinical situations should be less dependent than generalists on diagnostic testing and procedures because they could rely more on their honed clinical skills of history taking and physical examinations for medical problems they encounter often. However, the data suggest the reverse phenomenon: specialists freely use technologies at their disposal to supplement their clinical skills. Unencumbered by budgetary constraints, specialists' routine reliance on expensive technologies at times is extraordinary, especially when they have financial incentives to generate the testing (see Attachment A).

Schroeder points to the relative concentrations of generalist and specialist physicians in the United States with other industrialized countries that have much lower per capita health expenditures and as good or better results on major health status indicators, such as life expectancy and infant mortality.[54] Seventy-three percent of physicians in the United Kingdom, about 50 percent of Belgian and West German physicians, and 38 percent of Dutch physicians were general practitioners in the early 1980's.[92] These figures do not include the general care or principal care provided by internists and pediatricians, who may assume primary responsibility for general care for some of their patients in these countries. Unfortunately, current data detailing the mix between primary care and specialist physicians for industrialized nations are not readily available.[93]

A similar line of argument relies on the different ratios of primary care physicians and specialists in Health Maintenance Organizations (HMO's), particularly the staff and group model HMO's that have direct control over staffing decisions.[54] Logically, an HMO possesses every incentive to attain a "correct" mix of physicians because poor quality and excessive costs would lead to a competitive disadvantage for the HMO in the marketplace. Although HMO's demonstrate a variety of staffing patterns with varying mixes of specialists, generalists of different types, and mid-level practitioners,[94] the ratio of generalists to specialists in staff-model HMO's falls in the range of 1:1 to 6:4.[54,95] By implication, some of the economies of the HMO model may be due to this altered specialty mix.

These arguments are appealing but not decisive. The international comparisons ignore other, possibly crucial, differences in the organization and financing of the various health care systems. For example, in most Western European countries, specialists' practice locations are often constrained to hospitals and affiliated institutions, such that direct access to specialists is limited.[92,96,97] The ability to constrain cost increases may have as much to do with limiting freedom of access to specialists as the actual concentration of specialists in the delivery system. Similarly, many managed care organizations, including staff-model HMO's, independent practice association (IPA) HMO's and preferred provider organizations use gatekeeper systems to simulate the type of access controls used in Western European countries.[98] Some HMO's use altered financial incentives, such as primary care capitation, to influence physician cost generating behavior.[99] One of the most successful IPA-model HMO's, U.S. Healthcare, achieves competitive cost savings with a primary care to specialist ratio that is closer to the non-HMO national experience than to staff-model HMO's.[100] Indeed, U.S. Healthcare contracts with 3,500 primary physicians and 13,000 specialists, a primary care concentration of only 21 percent.

The German experience points to factors other than the relative generalist/specialty concentration as important in decreasing the rate of increase in national health spending. Even with relatively more generalists in the physician pool than the United States and with many specialists effectively limited to hospital-based institutions, West German health care spending as a percentage of GDP was comparable to that of the United States until the late 1970's.[101] In 1977, West Germany introduced prospectively negotiated budgets for physicians' services.[102] This fundamental move toward expenditure limits produced a flattening in the rate of growth in health expenditures and has continued to reduce the relative incomes of German physicians.[103]

It may be that the budget cap was a much more potent method of holding down health spending than limiting access to a defined number of specialists. It is possible to view the policies of reducing the relative supply of specialists, limiting access to them, and altering financial incentives as linked, all designed to counter specialty domination of the delivery system. The various policies may be mutually reinforcing, whether implemented at a national level or in the context of managed care.

Conclusion

In general, the data support the common perception that specialists do not distribute themselves as widely as generalists, that specialists do more to or for patients than generalists, at higher cost, with a probably beneficial effect on improving the process of care related to specific clinical conditions, but with an unknown impact on clinical outcomes. What is striking is that there has been little demonstrated difference between generalists and specialists within the domain of primary care. The limited available literature suggests that generalists, most of whom were not products of dedicated primary care residency tracks, are only marginally better than specialists at primary care functions, such as attention to health promotion and disease prevention and coordinating care. In addition to their deficits in health maintenance activities, generalist physicians have performed no better than their specialist peers at activities that properly belong within the clinical activities of a patient's personal, primary physician--for example, identifying and managing patients with addictive disorders, such as alcoholism.[94,95,96,97]

The existing data are troubling for those who maintain that primary care should be found not simply along the same continuum as subspecialty care, but rather as its own unique discipline. Unfortunately, because of the persuasive specialist domination of the health care system described above, it appears that, in the current system, being a generalist seems to mean being less than a specialist. That reality may be one basis for the disenchantment with the primary care specialties. Indeed, partly to profit from procedural reimbursement, general physicians are busy taking weekend courses learning colposcopy, rhinoscopy, sonography, and other technologies to become, in essence, mini-specialists. Of course, learning these skills permits primary care physicians to perform more basic services for their patients without referral. Potentially, broadening the skills of primary care physicians will promote the attribute of primary care detailed by the Institute of Medicine. The concerns are that these quasi-specialty skills are being learned and applied without quality assurance and that the technological orientation of American medicine will simply shift downwards to the primary care physician office, with yet another inflationary impact to the system as a whole.

In recent months, renewed efforts to reinvigorate primary care education have produced thoughtful proposals designed to improve the educational experience of would-be generalists and to support them to practice in medically underserved areas.[2,108,109] Perhaps these will be taken more seriously than similar efforts in the '70's. The experience of the last decade is not encouraging in that regard. On every important parameter, the domination of the health care system by specialists has increased. Even the long-awaited Medicare relative value scale may have only a marginal effect at reordering income incentives to more favorably reward primary care.

A new factor in the system that offers some hope for a change of the environment in which general medicine is practiced, is the expansion of managed care. While their performance to date has been disappointing, even to managed care advocates, managed care organizations have the inherent interest, the scale, and political independence to fundamentally reorder the priorities of medical care, including altering the role and the status of primary care physicians.[91] Neither the government, the medical profession as a whole, or medical schools specifically, have had the will to limit the production or direct the distribution of physicians, at a great cost to society. By default, managed care organizations could become one of society's mechanism for reordering priorities to promote access, quality, and efficiency of medical care services.[91]

TABLE 1

Mean Physician Net Income (in thousands of dollars) after Expenses, before taxes; and Average Annual Percent Change, 1975-1989*

	1975	1989	Average Annual Percent Change
All Physicians	56.4	155.8	6.6
Consumer Price Index**	53.8	124.0	4.7
General/Family	45.4	95.9	3.4
Internal medicine	57.0	146.5	6.0
Surgery	68.2	220.5	10.2
Pediatrics	44.3	104.7	4.0
Ob/Gyn	63.3	194.3	8.7
Radiology	75.2	210.5	9.0
Psychiatry	44.8	111.7	4.5
Anesthesiology	57.1	185.8	8.6
Pathology	NA	154.5	NA

*Data derived from citations 16 and 17.
**Base year 1982-1984=100

Attachment A

A recent case from the author's medical practice demonstrates the nonchalance with which specialists expect to apply very costly technologies to simple medical problems.

A 68-year-old male was referred to a neurologist because of numbness and tingling in the 4th and 5th digits of his left hand and mild weakness of the hand.
The neurologist's consultation report includes the following:

- Relevant history: the patient had had neck pain for 25-30 years, with frequent episodes of radiating pain down the arms. Within the past four weeks, the patient noted pain and tingling involving the left medial portion of the left arm and the 4th and 5th digits on the left hand, which was also slightly weaker during the same period. The patient also admitted to a long-term vague "central numbness" and tingling in the feet. The patient was under treatment for seizures, the last one occurring six years earlier.

- Positive findings on neurological examination: mild left upper extremity action tremor. Decreased pinprick sensation in the right median nerve distribution and left ulnar nerve distribution, and mild decreased vibratory sense and mild decreased position sense loss in the left ulnar nerve distribution.

- Clinical Impression:

  1. Probable cervical radiculopathy.

  2. Probable ulnar nerve entrapment neuropathy.

  3. Seizure disorder by history.

- Plan:

  "1. To get MRI of the head, MRI of the cervical spine, MRI of the LS-spine.

  2. To get B12 and folate, heavy metal screen, thyroid function, SMA 18, electromyogram and nerve conduction study upper extremity bilaterally.

  3. Nerve conduction study of lower extremity bilaterally."

In this case, the patient ignored the neurologist's recommendations and returned to his regular primary care physician. After a two-week course of anti-inflammatory medication and using a soft cervical collar, his new symptoms cleared up.

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Primary Care Access and Consideration of Cost-effectiveness

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Introduction

Two issues have managed to remain at the top of the health policy agenda for more than 20 years: access to health care for the medically indigent and control of rising health care costs. Each has long had its own constituency, and debates about appropriate remedial action have historically been conducted largely without much consideration of how these issues relate to each other. However, in recent years several developments have begun to force recognition that the issues are to some degree interrelated.

The connection began to become unavoidable in the mid-1980's when efforts to control hospital costs had gathered sufficient momentum to cause a growing number of hospital administrators to have serious concerns about their bottom lines. Pressures from increasingly restrictive Medicare DRG reimbursement policies and from discount pricing demands from HMO's/PPO's made less tenable the time-honored tradition of shifting the costs of uncompensated care for the uninsured (and losses from below-cost Medicaid reimbursement) to privately insured patients. The burden of uncompensated care had continued to grow as the pool of payers to whom these costs could be shifted actually shrank. As a result, for hospitals (as well as employers and private third-party payers), the issue of controlling health costs became inextricably linked to issues relating to access and health care coverage for the 37 million Americans without insurance. Their voices (although less than unified on an approach) were added to those of the traditional advocates urging reform to expand insurance coverage and help improve health care services for the medically indigent.

The first stirring of action to cope with this cost/access issue was at the State level, with State governments examining a broad range of interventions such as expanding Medicaid, augmenting direct service programs (e.g., support for public clinics and community health centers) and encouraging or mandating broader insurance by employers. In the context of these local debates about the various options to improve access, traditional advocates for the medically indigent were increasingly forced to confront the political reality that any intervention had to take into account its impact on total health costs. Moreover, given the limitations on local revenue sources, methods to maximize benefit with a limited amount of available funding were almost always an important issue in the discussions. Clearly some approaches were bound to have more "bang for the buck" than others, and consideration of cost-effectiveness inevitably became a central concern in the policy making process. In some States, such as Florida and New York, these decisions weighing costs and benefits were made implicitly, as substantial new funds were allocated to provide direct support for expansion/improvement of clinics and community health centers, apparently reflecting a view that such an approach provided the most benefit given available resources. In Oregon, the debate was more explicit, with a revamped Medicaid program adopted that substantially expanded the number of individuals covered, but that limited coverage to specific services perceived to provide the greatest benefit (initially based on a strict cost/benefit analysis, but later amended to incorporate more directly consideration of noneconomic values of the community in determining "benefit").

In the past six months, there has even begun to be some significant movement on the national level, as the various political camps have begun to respond to an apparent increase in public concern about the cost/access issues. The proposals already offered or under formulation appear to be more serious, as well as broader in their impact. However, the coming debate and political drama will be conducted in an environment of an enormous Federal budget deficit and a stagnant national economy. Accordingly, as the discussions become more concrete, it will be essential to address issues of cost-effectiveness, as well as to understand how changes in one part of the system are likely to affect other parts of the system. What approaches have the greatest promise to improve access and what are their relative costs? Will providing coverage to the uninsured inevitably lead to higher use rates for both outpatient and inpatient care? Can improvements in the infrastructure of resources to provide care to the indigent be expected to pay dividends in more efficient use of the health care delivery system (i.e., less reliance on emergency room and inpatient care)? Is primary care itself cost-effective?

In this paper, we will touch on these major issues, discussing briefly some of the existing evidence on the cost-effectiveness of primary care and exploring the factors that must be taken into account in considering the cost-effectiveness of efforts to improve access to primary care. We will describe some recent findings from the Ambulatory Care Access Project in New York City that document hospital utilization patterns of low-income areas, and discuss what these findings suggest about the nature of the access problem and their implications for methods of evaluating cost-effectiveness.

Background on Cost-effectiveness of Primary Care

Of course, a belief that primary care is cost-effective is axiomatic in most health policy discussions. Efforts to improve primary care services for the indigent have been central to the public health movement from its inception, and medical manpower policies have long been geared (largely in vain) to encourage growth of primary care professionals. While there are many and diverse factors that underlie these policies, they are no doubt reinforced by a fundamental belief that preventing the onset of illness, catching a disease at its earliest stage prior to serious exacerbation, and effectively managing a chronic condition can not only reduce morbidity and mortality, but also help avoid the need for more intensive and, ultimately, more costly care at later stages.

Although no rigorous and complete cost-effectiveness analysis has been conducted for primary care or even many of its major components, this dogma does find considerable support in the literature and applied research. Perhaps the classic example relates to prenatal care. In its landmark analysis of efforts to promote child health and development through prevention of low birthweight, the Institute of Medicine determined that every dollar invested in prenatal care for high-risk pregnancies (women on welfare or with less than a high school education), $3.38 would be saved from reductions in cost associated with treatment of low birthweight infants.[1] Here, improved outcomes could be achieved while actually reducing total health expenditures.

Of course, interventions for high-risk pregnant women present a somewhat unique case. The target population is easily identifiable, the intervention is relatively inexpensive, and the costs associated with bad outcomes are enormous. While these findings have been important in promoting increased prenatal services for the medically indigent (and undoubtedly were an important factor in the Federal efforts mandating expansion of Medicaid coverage for pregnant women), the magnitude of the benefit should not be allowed to distort consideration of cost-effectiveness issues.

The overwhelming majority of routine medical care, especially preventive care, is unlikely to offer similar paybacks. The issue in most cases is relative cost-effectiveness--how much benefit in terms of increased life expectancy or improvement in quality of life at what cost does a medical treatment offer. More typical examples involve screening women for cervical or breast cancer. While the cost of cancer in human and economic terms is large, the target group is also large and the benefits from screening as measured by increased life expectancy, although significant, are relatively small. As a result, there is no economic payback from a screening. A cervical cancer screening program providing a Pap smear for all women age 20-75 once every three years has been estimated to have an annual net cost (including any savings from early detection) of $1.9 billion, reducing the lifetime risk of death from cancer by 107 in 10,000 for a 20-year-old woman.[2] A breast cancer screening program for women age 40-75 providing a yearly mammogram is estimated to have an annual net cost of $5.2 billion, reducing the chance of dying from breast cancer by 90 in 10,000 for women who are screened.[3] These improvements in health outcomes are substantial--the issue raised by cost-effectiveness analysis is whether limited funds are best spent on these interventions or on other programs that provide more or different benefits.

The potential capacity of primary care in general to have an impact on total health care costs is illustrated by the research on health maintenance organizations. The guiding philosophy of HMO's is the belief that improved management of health care services, especially the provision of timely and effective primary care, can reduce costs without a detriment in health care outcomes. While the evidence supporting this view is far from clear, the preponderance of well-designed studies suggests that HMO's can produce savings. In a randomized controlled trial in the Rand Health Insurance Experiment, a mature staff model HMO was found to achieve 28 percent lower costs than a comprehensive fee-for-service plan. These savings were achieved through 40 percent lower hospital admission rates, with the reductions coming almost exclusively from "discretionary" medical and surgical admissions and with no observable detriment in health outcomes.[4] Current research does not permit a complete understanding of how these savings were achieved (i.e., differences in physician practice style vs the impact of more effective outpatient management),[5] and research on the effect of HMO enrollment on low-income/Medicaid patients is more equivocal.[6] However, these studies do illustrate the potential for ambulatory care to substitute for inpatient care in a manner that reduces total costs without impairing health outcomes.

The capacity of ambulatory care to have an impact on the need for institutional care has been documented in many studies. Recent research in District of Columbia hospitals found that 36.2 percent of uninsured non-obstetric, non-trauma patients had admissions that were preventable or avoidable with timely and effective outpatient care. Uninsured patients who reported having one person in charge of their care had a preventable/avoidable rate of 20.5 percent, while those without a single source had rates of 41.0 percent. The rate for privately insured patients was 12.2 percent, while 21.2 percent of Medicaid admissions were found to be preventable or avoidable.[7] Similar rates of preventable admissions have been documented in other studies.[8] While this research did not address the costs of providing timely outpatient care required to prevent/avoid hospital admissions, it illustrates the potential for substantial savings from reduced hospital utilization that could at least offset some of the costs of expanding outpatient services.

Other research has examined efforts to eliminate barriers to access to health care services and to improve management of outpatient care for patients with specific medical conditions. For example, in a recent study at Bellevue Hospital in New York City, a group of chronic asthma patients were randomly selected and enrolled in a program to improve their capacity to self-manage their condition. Participants were given intensive education on use of inhalers for beta agonists and corticosteroids, including specific training on use of a "spacer reservoir device" designed to improve effectiveness of the application of medication. Patients were also prescribed a limited dose of prednisone for emergency use for severe exacerbation and were trained in its appropriate use. Finally, participants were provided access to a hot-line for advice during severe attacks or for help on questions about self-management or the treatment regimen. Patients enrolled in the program experienced dramatically lower hospital utilization rates when compared with a control group of asthma patients who received routine care, reducing asthma admissions by two-thirds. While the costs of the enhanced outpatient management of these patients were quite high, total expenditures including hospital costs of the experimental group were about half those of patients receiving routine outpatient care.[9]

Of course, not all primary care is likely to meet even the least stringent test of cost-effectiveness. Routine office visits for non-specific symptoms in a five-year-old will seldom produce more benefit than reassurance to a worried parent. However, this growing body of research suggests the potential for outpatient care to have a significant impact on the use of inpatient services, often producing savings that can at least help offset some of the costs of outpatient care. This relationship between access to ambulatory care and hospital use is explored further in the next section which compares hospital utilization patterns of patients based on socio-economic status.

Some Findings from the Ambulatory Care Access Project

The Ambulatory Care Access Project (ACAP) is an ongoing effort to study the economic, structural, and social/cultural issues that constrain the delivery of effective outpatient care to the medically indigent. In its first phase, the project has analyzed hospital admission patterns in New York City to help understand the differences in admission rates between high- and low-income neighborhoods and to evaluate whether the analysis of hospital utilization patterns can help identify access barriers for outpatient care.

Large variations in hospital admission rates have been documented in numerous studies,[10] and although many explanations have been offered,[11] most work to date has focused on differences in physician decision making as a major factor.[12] In contrast, the ACAP project has explored the impact of socio-economic variables on hospitalization rates, and has identified utilization patterns that suggest a broad range of factors related to primary care access, characteristics of the patient population, and structure of the health care delivery system that may have a significant effect on admission rates.[13]

An important preliminary step in the project was the establishment of a taxonomy of diagnoses to provide a framework for the analysis of hospital admission patterns. A medical advisory panel was formed to provide guidance in the identification of ICD-9-CM diagnoses for three categories of conditions:

- **Marker conditions**--These are diagnoses for which the provision of timely and effective outpatient care was judged to have little impact on the need for hospital admission, and for which there is substantial agreement on the criteria for hospital admission (e.g., heart attack and appendicitis).

- **Ambulatory care sensitive (ACS) conditions**--These are diagnoses for which timely and effective outpatient care can reduce the risk of hospitalization, by preventing its onset, by controlling an acute episode, or by managing a chronic condition. A further requirement was that there be a relatively short time period between medical neglect of the condition and the subsequent need for hospital admission (e.g., asthma, pneumonia, diabetes).

- **Referral sensitive surgeries**--These are high-cost/high-technology procedures for which barriers to access or referral to specialty care may exist (e.g., organ transplants, joint replacement, coronary bypass surgery).

Using these diagnostic groupings, a small area analysis of hospital admissions was conducted for New York City's 164 residential zip code areas. The analysis focused on persons under the age of 65, since the impact of indigency and other barriers to access was assumed to be greatest among the non-Medicare population. Residential population rates were age and sex adjusted using standard statistical techniques (direct method). In analyzing the impact of income on utilization, zip codes were classified based on the percentage of households with incomes below $15,000. For purposes of comparison, low-income zip code areas were defined as those with more than 60 percent of households with incomes below $15,000, and high-income zip codes were defined as areas with less than 17.5 percent of households with incomes below $15,000.

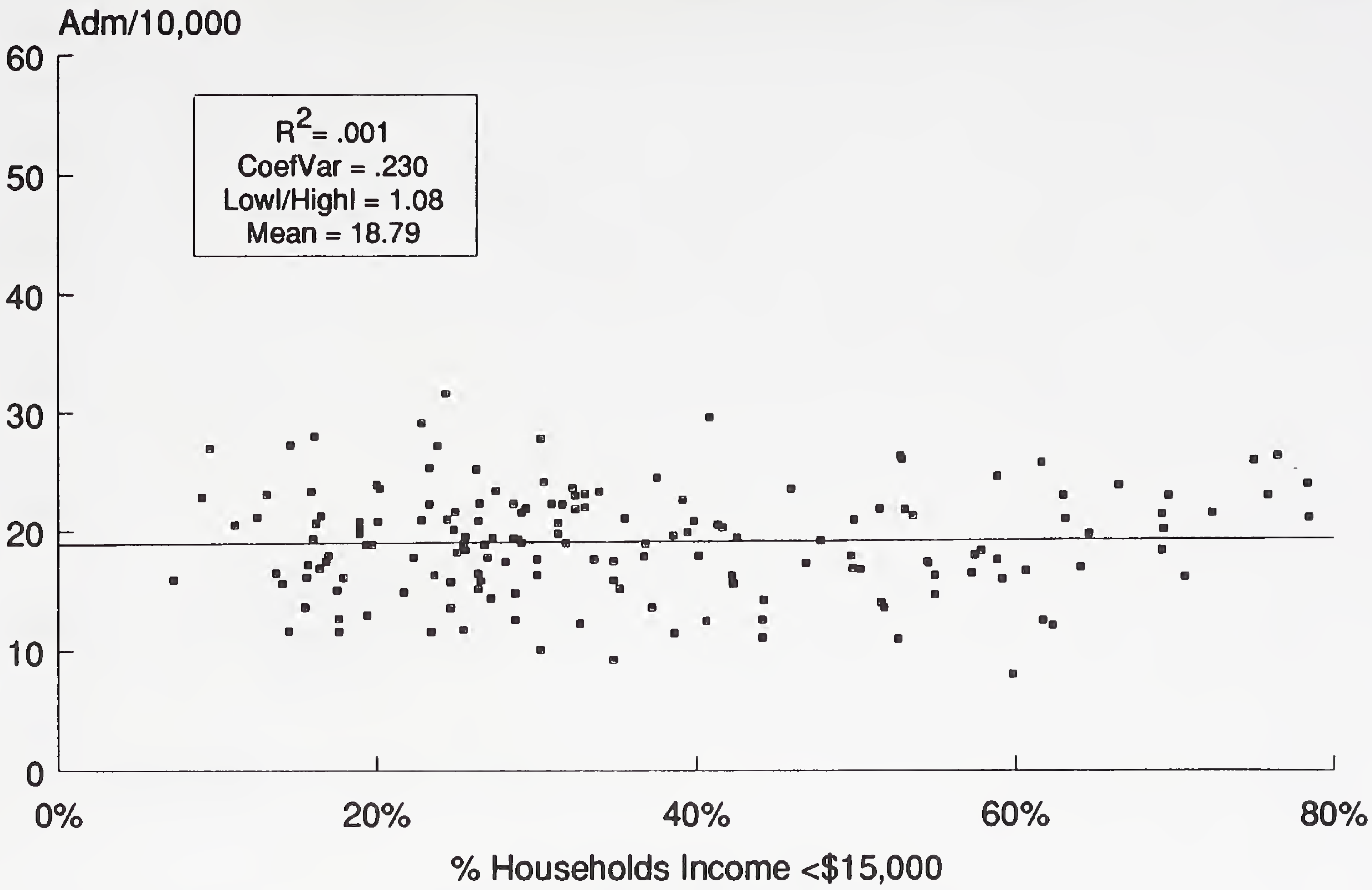
As anticipated, there was very little variation among zip codes in "marker condition" hospitalization rates for under-age-65 populations, and no statistically significant differences in rates between low- and high-income areas. For example, for myocardial infarction (including only cases with a disposition of death or a length of stay greater than five days), no association was found between zip code admission rates and the percent of households in the zip code with incomes below $15,000 ($R^2$ = .000), and the ratio between the admission rates for low- and high-income zip codes was 1.00. Exhibit 1 illustrates the lack of association between area income and admission rates for all marker conditions combined.

For conditions identified by the medical advisory panel as being responsive to timely and effective outpatient care, under-age-65 populations in low-income areas had substantially higher admission rates than those in high-income areas. A strong association was found between admission rates and the proportion of poor (household income less than $15,000) in a zip code area. For example, admission rates for asthma were 6.4 times higher in low-income areas than in high-income areas, with more than 70 percent of the variation among areas (R^2 = .710) explained by the proportion of poor in an area. Similarly, admission rates for diabetic ketoacidosis and hyperosmolar coma were 6.3 times higher in low-income areas (R^2 = .523), for bacterial pneumonia 5.3 times higher (R^2 = .539), and for congestive heart failure 4.6 times higher (R^2 = .595). For all 30 ACS conditions combined, the ratio between low-income and high-income areas was 3.87, with more than two-thirds of the variation (R^2 = .677) explained by area income (Exhibit 2).

However, for high-cost, technology-intensive "referral sensitive" surgeries (such as organ transplants, joint replacement, coronary bypass surgery, etc.), low-income areas were found to have rates about half those of higher income areas, with a negative association (R^2 = .241) between percent poor and admission rates in each zip code (Exhibit 3).

Exhibit 1

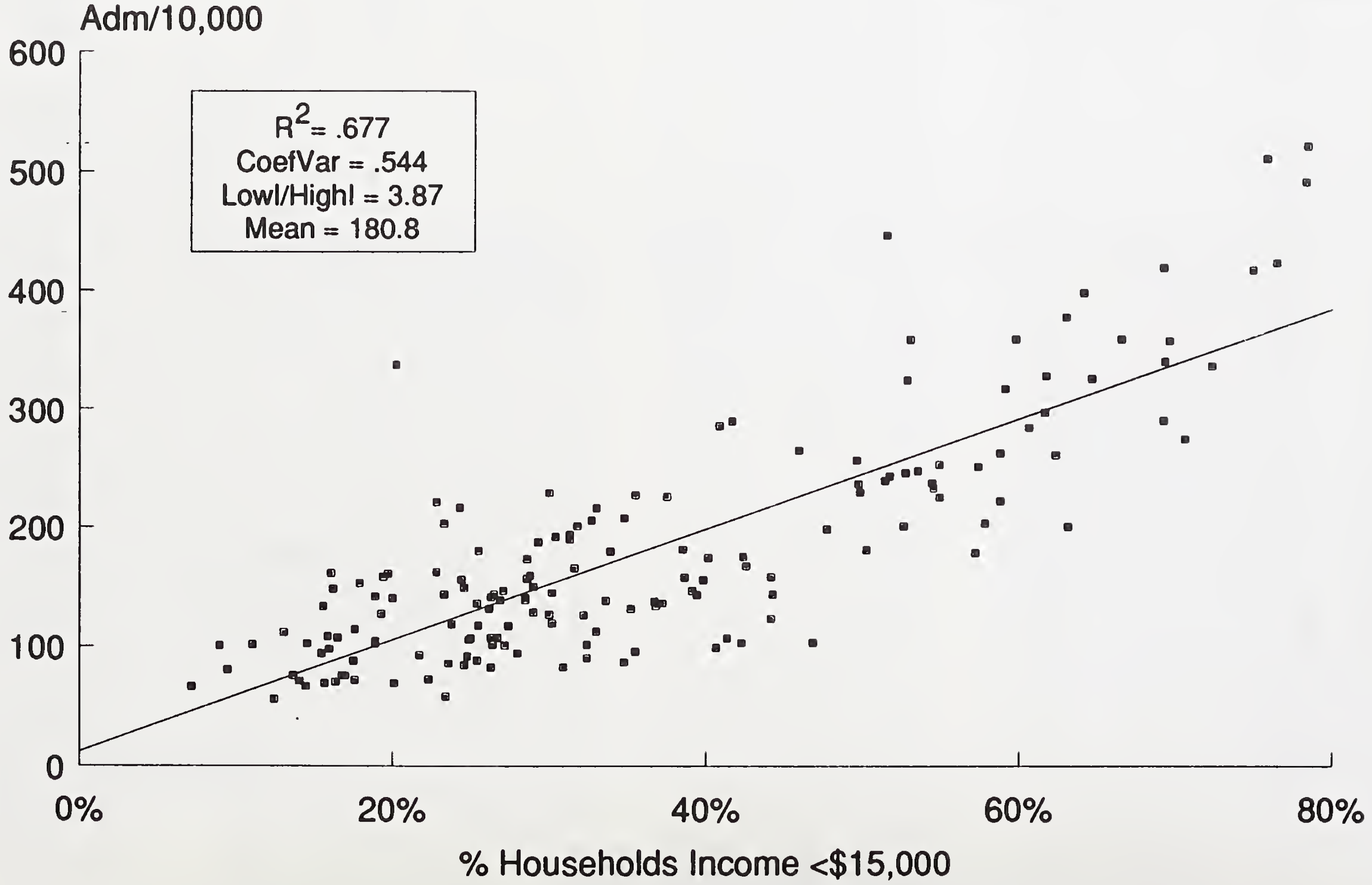
New York City
Marker Conditions
Age < 65 1988



Source: SPARCS, UHF

Exhibit 2

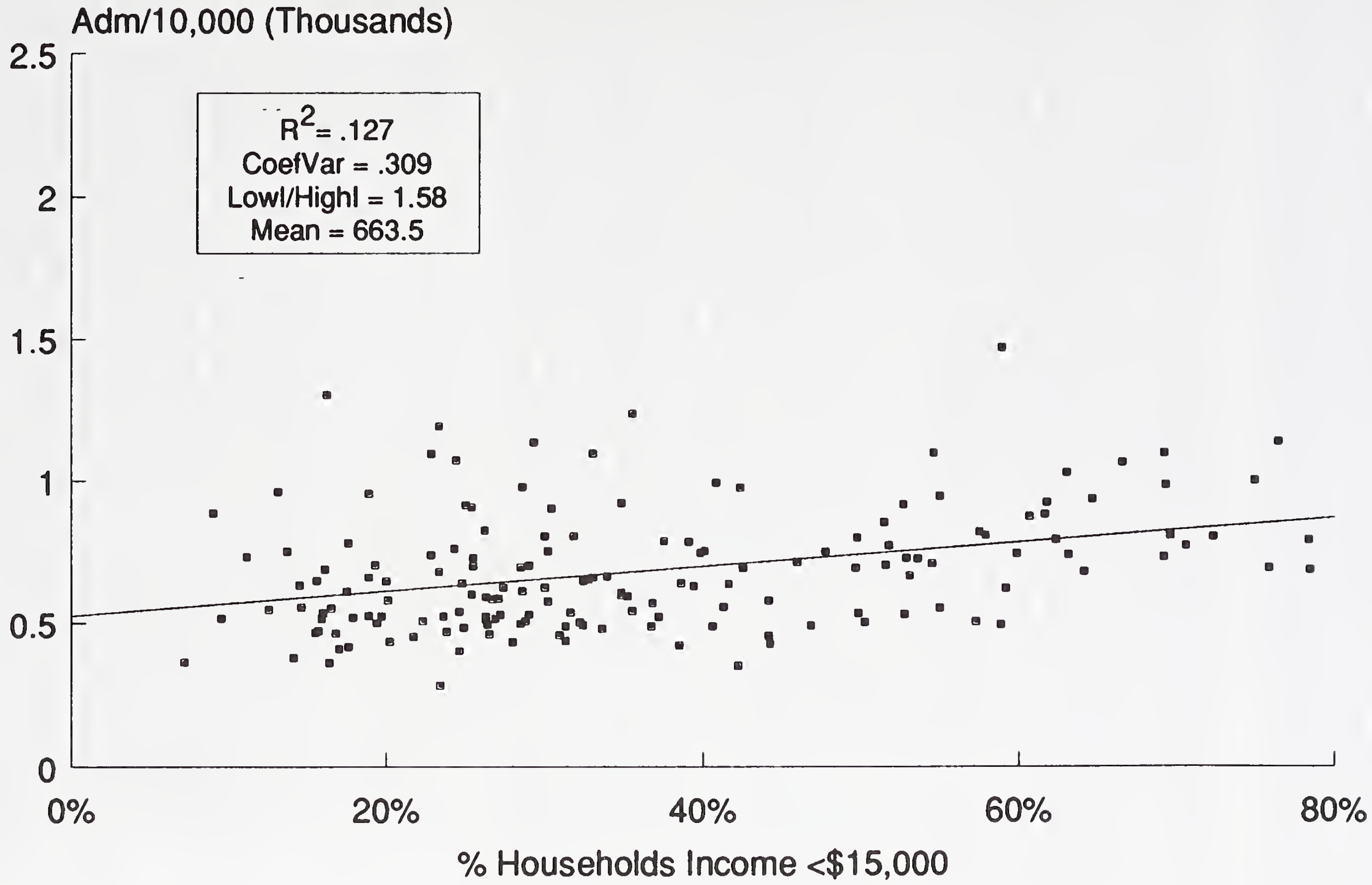
New York City
Ambulatory Care Sensitive Conditions
Age < 65 1988



Source: SPARCS, UHF

Exhibit 3

New York City
Ambulatory Care Sensitive Conditions
Age 65+ 1988



Source: SPARCS, UHF

One of the most significant findings was the relationship between ACS condition admission rates and patient age. For patients over the age of 65, the ratio between richer and poorer area ACS condition admission rates was 1.58, with an R^2 of only .127--substantially lower than for patients under 65. The difference in ACS admission rates between high- and low-income areas is smallest among the youngest and oldest age cohorts, with the difference between rich and poor peaking in the 25-44 age cohorts.

In summary, the ACAP project has identified a consistent and strong association between poverty and hospital admission rates for a broad range of conditions that are sensitive to the provision of timely and effective outpatient care, which in many cases involves basic primary care services. While many factors contribute to the higher admission rates among low-income populations[14], these findings suggest that access to ambulatory care can have a significant effect on hospital admission rates for a broad range of medical conditions, with large and important impact on the total cost of health care services for the medically indigent.

Implications of Research Findings

Primary care is used to describe a broad range of medical activities, from preventive care through diagnosis and treatment of a wide array of medical conditions. The costs and measurable benefits of these activities are likely to vary enormously, depending on the type of treatment involved and point of intervention. Accordingly we have made no attempt to survey the entire field of cost-effectiveness research concerning primary care, an endeavor that is well beyond the scope of this paper and one that is destined to fall short of providing definitive answers about cost and benefits for many areas of primary care. However, the limited sampling of research findings we have discussed does point to several conclusions that are likely to have important implications for public policy discussions about primary care and efforts to improve access for the medically indigent.

- **The potential for primary care to impact hospital use is significant and the dollars involved are large**

  Whether examining the impact of HMO's/managed care, the effect of targeted interventions for chronic asthma patients, or the level of preventable/avoidable admissions, the potential for primary care that is delivered in a timely and effective manner to influence hospital utilization is substantial. Moreover, the amount of health care expenditures involved is enormous. Looking at New York City alone, if admission rates in low-income areas for ACS conditions were reduced to a rate that remained double that of high-income neighborhoods, the result would be 15,000 fewer admissions, involving hospital expenses of more than $100 million. While not all of these expenses could be recouped by the system (because marginal costs savings would be somewhat less), the amount of potential savings are large and could provide a substantial offset for the costs of strengthening the outpatient delivery system. The complexity and intractable nature of access barriers to outpatient care and the historic ability of the health care delivery system to expand to meet availability of resource would make any expectation of net savings unrealistic, but any analysis evaluating the cost-effectiveness of expansion or improvements in primary care must incorporate the potential impact of such interventions on hospital utilization patterns.

- **Primary care has some unique attributes that must be taken into account in evaluating cost-effectiveness and designing interventions**

  Most efforts to evaluate cost-effectiveness involve consideration of a single medical condition and the associated medical interventions for its treatment. While determining costs and benefits is often a complex and difficult task given the lack of strong scientific evidence on outcomes for much of medicine and the number of alternative diagnostic and treatment branches and loops potentially involved, the focus is relatively narrow, and each condition is typically examined in isolation from unrelated medical activity. The task of considering the cost-effectiveness of primary care is a more daunting one--not only does the field include a broad array of diverse conditions and treatments, but continuity of care (even among medically unrelated episodes) can be an important factor in the effectiveness of primary care treatment.

  Some of the research discussed above illustrates the potential importance of a strong relationship between a patient and provider--patients who report having a single person in charge of their care are much less likely to encounter outpatient access problems and have significantly lower levels of preventable/avoidable hospital admissions. The importance of continuity of care has two implications for cost-effectiveness analysis. First, it must be factored in both the cost and benefit side of the equation. The costs of establishing continuity are likely to be higher (as well as difficult to quantify), but the benefits are also likely to be important (as well as difficult to quantify). More research is clearly needed here, but understanding the impact and costs of continuity are important to the design of any intervention to improve access to primary care.

  Second, as a practical matter, establishing continuity of care will involve accepting treatments and utilization patterns that viewed individually do not meet even the least stringent test of cost-effectiveness. For example, in Oregon several routine primary care activities, such as treatments for conjunctivitis, stomach pain/vomiting, bronchitis, tonsillitis/sore throat, respiratory infection, and food poisoning, were determined to lack sufficient cost-effectiveness for inclusion in its final package of covered services.[15] Examined in isolation, these determinations may be understandable--but taken together, a coverage package that does not include these services may seriously impair continuity of care. This approach places a burden on the patient to determine what is likely to be covered and what is not, and when to go to the doctor and when to rely on home treatment. For even the most knowledgeable, well-educated patient, making these distinctions can be difficult. Moreover, a patient who is covered for some but not all routine care will undoubtedly find it more difficult to establish a permanent connection to the health care delivery system, impairing the capacity of the patient and physician to establish a relationship that will foster continuity of care.

- **An insurance card alone does not assure access--evaluation of the cost-effectiveness of any intervention to improve access to primary care must include consideration of economic and non-economic barriers to care**

In the findings from the small area analysis of New York City, more than 60 percent of low-income area admissions were Medicaid patients (with only 16 percent coming from uninsured patients). In examining preventable/avoidable admissions in District of Columbia hospitals, Medicaid patients had lower rates of preventable/avoidable admissions, but their rates remained twice those of privately insured patients. Although an important goal of Medicaid expansions for pregnant women has been improved birth outcomes through provision of timely prenatal care, the rates of late or no prenatal care among Medicaid recipients have been found to be only marginally improved compared to uninsured women, and almost six times higher than for privately insured women.[16] Accordingly, while providing insurance coverage to all Americans is a critical step in helping improve access to primary care, more will be required to ensure efficient use of health care resources and to achieve effective health care outcomes.

Improving access to primary care is often discussed as if it were a one-dimensional, well-defined problem. Clearly it is not. Much remains unknown about the nature and causes of impediments to access, and it is vitally important to understand more about the various economic, structural, and personal barriers that are traditionally lumped together as "barriers to access."

Medicaid has been an important element in improving access for many in need. However, in many States, low Medicaid reimbursement levels for outpatient care can have the effect of severely limiting the availability of providers willing to accept Medicaid patients, and a Medicaid card-holder's "access" to care is often reduced to a choice among an over-crowded clinic, a store-front Medicaid mill, or a busy hospital emergency room.

Moreover, indirect economic barriers to care can also prove insurmountable for many indigent patients. Obtaining timely ambulatory care may require getting off work, forgoing wages, arranging child care, and procuring transportation--all of which may be difficult for a patient with limited resources. How these factors influence outpatient utilization and hospital admission rates is not well-documented, but they are undoubtedly significant.

The organization and mix of available outpatient resources may also have an important impact on access. The presence or absence of a public hospital, the extent to which community-based clinics are integrated with inpatient providers, and the effectiveness of community outreach programs all may have an influence on the accessibility of ambulatory care in an area. In the New York City analysis of hospital utilization, some low-income neighborhoods had ACS admission rates that were significantly higher than other areas with a similar socio-economic mix. Of course the Medicaid program was the same throughout the city, and these differences, therefore, may be an indication of the need for more resources in these areas, or a "red flag" identifying performance problems in existing programs.

There is also a broad range of personal factors that can affect access. Language barriers, educational deficits, differences in health beliefs, health habits, alcohol and drug use, and the presence/absence of a strong, stable home environment all can influence when patients seek care and how well an episode of illness is managed outside the hospital. Clearly, any comprehensive program to improve access must include consideration of these factors in the design and implementation of such initiatives.

These complexities of the access problem make evaluation of costs and benefits of primary care services even more difficult than a traditional cost-effectiveness analysis. A simple weighing of costs and estimated benefit of treatment is destined to miss the mark unless it incorporates consideration of how to reach the medically indigent and how to cope with the special problems these patients often present. For example, it would be relatively straightforward to determine the cost-effectiveness of treatment of cellulitis. Identifying a subcutaneous tissue infection early and treating it with medication almost assures a cure and avoidance of complications (including hospitalization)--a probable winner on any cost-effectiveness scale. But a medically indigent cellulitis patient may well be without a usual source of care, homeless, alcohol/drug addicted, mentally ill, non-English speaking, illiterate and distrustful of physicians. Clearly a Medicaid card, or even a Blue Cross card, is not the full solution. Designing a health care delivery system that can reach these patients and provide the necessary support to ensure compliance is an incredible challenge, adding costs, but also promising significant benefits in health outcomes and more efficient resource use. Therefore, to be a useful tool in public policy decisions about eliminating barriers to access, cost-effectiveness analysis will have to go beyond simplistic efforts to define a minimum benefit package, and help health policy makers fashion a comprehensive approach that will address the unique needs of the medically indigent population.

- **For some carefully targeted interventions, cost-effectiveness is likely to be very high**

Broad based efforts to improve primary care for the medically indigent, although producing significant benefits in health outcomes for the affected populations, are unlikely to produce net savings to the health delivery system. While reduced hospitalizations for conditions sensitive to timely and effective outpatient care can be expected, these savings are not large enough to pay for expense of expanded primary care (although they are likely to provide a substantial offset for these expenses).

However, some interventions can actually produce net savings. For example, as noted above, prenatal care for high-risk women has been demonstrated to return more than three dollars for each dollar invested in preventive care. There are probably several other subgroups and disease-specific circumstances that can produce similar savings. Perhaps the most promising area relates to management of chronic disease patients. Some patients with severe diabetes and asthma conditions have multiple acute episodes resulting in several hospitalizations each year. As demonstrated by the Bellevue Hospital asthma project described above, even a fairly costly intervention strategy can achieve substantial net savings if targeted at high-risk patients with a history of repeat hospitalizations. Programs that incorporate intensive patient education, careful clinical management and enhanced access to outpatient care hold great promise of cost-effectiveness for these chronically ill patients.

While such initiatives must be considered in the context of broader efforts to improve access for primary care for all medically indigent patients, and appropriate caution must be exercised in the design of the programs to prevent fragmentation of services to serve the total health care needs of participants, the potential cost-effectiveness of these approaches merits more attention by hospitals and community health centers traditionally serving these populations. Such initiatives should also be of particular interest to Medicaid agencies, where management information systems provide a mechanism for identifying candidates for participation, and any savings generated will be captured directly in the bottom line of the agency's budget.

After two decades without significant progress in improving access for the Nation's uninsured and medically indigent, there finally appears to be some movement on both the local and national level. However, in an era of budget deficits and fiscal restraint, issues of cost-effectiveness will inevitably become important as policy makers consider options for reform. While the recent experience in Oregon with its radical approach to Medicaid redesign has raised considerable concern among many on how cost-effectiveness is employed in the design of programs for the medically indigent, it can be an important tool to help frame and inform difficult policy decisions that inevitably involve a process of weighing benefits and costs. There are several unique attributes of primary care that must be taken into account in any cost-effectiveness analysis, and the task will be made more difficult when the focus is on the medically indigent because of the complex nature of the barriers to access for these populations. However, given the inefficiencies inherent in the current system (where a lack of timely ambulatory care means high rates of avoidable hospital admissions), well-designed cost-effectiveness analyses are likely to be critical in obtaining more reasonable estimates of the costs of expanding insurance coverage at the national level, and may prove useful in designing and targeting less ambitious initiatives at the local level.

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Report of the AHCPR Task Force: Building Capacity in Primary Care Research

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This report describes the critical need for primary care research and outlines the steps necessary to build a vital research community that can provide new advances to guide and improve the care delivered by primary care providers. The impetus for this report was several striking incongruities between the quality of health care in America and the allocation of resources to create knowledge, systems, and technologies to improve that care.

For example:

- The United States spends more per capita for health care than any other nation
- The United States spends more on health related research than any other nation
- The majority of health care is delivered by primary care providers in non-hospital settings
- Very little research is conducted in primary care, compared to other medical specialties, to guide and advance the practice of primary care providers
- Few researchers are trained to conduct primary care research
- Minimal Federal, State, or foundation research dollars are designated to support primary care research or to train primary care researchers
- No national infrastructure exists to support a primary care research community, such as conferences, research centers of excellence.

Clearly, primary care must play a central role in improving the inequities in access to health care and in improving the overall health of all Americans. But, there is a significant gap between the importance of these crucial services and the research being done to support and guide the improved practice and organization of primary care.

Recognizing this discrepancy, the Agency for Health Care Policy and Research (AHCPR) assembled a Task Force to develop a plan for increasing research capacity in primary care. As defined in this report, primary care research encompasses research in a broad range of disciplines in the biological, social, behavioral, and social sciences. Members of the Task Force include researchers from general internal medicine, family medicine, general pediatrics, nursing and dentistry, as well as representatives of the major professional organizations of these fields. The objectives of the Task Force included: 1) a systematic examination of existing primary care research; and 2) the development of a strategic plan addressing the need for additional primary care research and the necessary steps to increase research productivity at all levels. The Task Force examined the spectrum of research needs in primary care and the adequacy of previous efforts in meeting those needs. The recommendations presented in this report are achievable, and Americans should expect the scientific community to pursue these goals aggressively.

Recommendations for Building Capacity in Primary Care Research

In a paper prepared for the Task Force, Dr. Fletcher described the critical need for primary care research that can expand the scientific basis of primary care practice and lead to improved access to appropriate care, improved health status, enhanced patient satisfaction, and reduced total health care costs. What will it take to produce this essential research? To answer this question, the Task Force reviewed the literature and consulted experts on the characteristics of a vigorous research enterprise. This work revealed that a productive research community is undergirded by essential, interrelated features that can be clustered into four strategic levels: 1) national; 2) institutional; 3) collaboration across institutions, disciplines, and practices; and 4) individual. To have a vigorous primary care research enterprise, these features, at a minimum, will need to be established. The Task Force recommended the strategies below for establishing each of the essential features.[1] The central theme of the recommendations is expanding the content of primary care research that will help improve the health of the Nation. Three background papers, addressing research needs from the national, institutional, and individual perspectives are available by request from AHCPR.

Finally, there is a need for studies on how to build and maintain a productive research community, at the national and institutional levels, as well as on how to train primary care researchers.

National Strategies

Recommendation 1:

The Department of Health and Human Services and the Public Health Service should increase support for research in primary care.

Augmenting the support for research in primary care is critically important. Increased support should include individual, institutional, and center research dollars, funds to train primary care researchers, and administrative and peer review structures committed to primary care. Also, support is needed to develop new research methods and technologies to study primary care problems that cannot be adequately investigated with current techniques.

Some areas of research considered important include: studies on the problems that people present with in primary care; studies on the social and psychological factors that affect health outcomes; studies on prevention, improving function, and the relief of suffering in primary care; studies on improving communication between patients and practitioners; and studies that determine how primary care practitioners can coordinate the process of care and use resources judiciously.

Recommendation 2:

The Agency for Health Care Policy and Research (AHCPR) should implement mechanisms to develop and rank order a research agenda for primary care.

Although the Task Force identified a number of areas in primary care requiring additional research, there is a need to address this topic systematically. Due to the diverse and multidisciplinary nature of primary care, there is a need to obtain guidance from a broad array of constituents likely to contribute to and benefit from an expanded research initiative in primary care, so that increases in funding can be allocated to those areas deemed most important to the Nation's health.

Recommendation 3:

A National Primary Care Research Committee should be authorized and funded by the Congress to make recommendations on research in primary care, including related issues in education.

Since there is no framework to develop and advance primary care research, a National Primary Care Research Committee should be established. It should include representatives from the Public Health Service, the Health Care Financing Administration, primary care professional organizations, academic societies, foundations, patient and consumer groups, insurers, and business. This Committee would serve as the Nation's focal point for leadership in primary care research. Its functions would include:

- Coordination and development of primary care research resources, including mechanisms to integrate public and private support for research and those persons involved in its conduct.

- Identification of public and private sources of increasing funding and mechanisms to assure their effective use.

- Integration of primary care research efforts with other national health research programs.

- Development of programs to disseminate information about primary care research and its products, including promoting their use in clinical practice and in the development of a constituency supportive of primary care research.

- Continued development and refinement of a national primary care research agenda, including identification of research areas most likely to have substantial and timely impact on the health of the American people.

Institutional Strategies

There are a number of critical organizational features of research institutions that enable institutions to contribute to a national research community for primary care.[2,3,4] The following two recommendations address two essential institutional elements, infrastructure and leadership.

Recommendation 4:

The Federal Government should appropriate funds to the Agency for Health Care Policy and Research to provide support for institutions to develop a culture and infrastructure that is conducive to primary care research.

Essential infrastructure components include: technical support services (e.g., database management, statistical assistance, manuscript and graphics preparation); financial support for pilot projects; protected time and space for research; library; literature search and retrieval capability; access to research assistants and support staff; consultants; computer hardware and software; and mechanisms for frequent communication among researchers.[2,3]

Basic infrastructural needs in primary care are similar to those for other research enterprises, but start-up costs for computer systems, research assistants, and support staff will require incremental support since existing research support within academic institutions is frequently neither well-suited nor proximally located to primary care research sites.

Primary care research must be explicitly recognized as fundamental to the institution's mission and rewarded appropriately. Clinician researchers who are expected to maintain heavy clinical service commitments will not be able to sustain research productivity. Academic units that are underfunded and understaffed and struggling to maintain their presence in the health sciences curriculum are not conducive to research. A lack of predictable research funding can subvert the productivity of senior researchers and seriously constrain the career development of junior clinician researchers. Therefore, any national effort to improve the primary care research capacity of the country must be coupled with efforts to maintain and improve primary care academic units. To date, a very small number of primary care researchers are funded by the National Institutes of Health (NIH), whereas many researchers in primary care have been highly dependent on limited funding from the Health Resources Services Administration, AHCPR, and, in some instances, from foundations and State initiatives. These sources of funding must be substantially augmented to assure increased research productivity.

Recommendation 5:

The Public Health Service should support mechanisms to enhance the leadership skills of primary care researchers.

The interests and accomplishments of one's colleagues and leaders greatly influence the productivity of researchers working together. Organizational leadership may be the single most important factor influencing a group's research productivity. Because the leader controls or influences the requisite features, assuring the presence of these factors is most often achieved by appointing a leader who has been a successful researcher before becoming an administrator.[2] A trained and seasoned researcher can facilitate others' productivity through his or her mentoring, research network, experience in grant writing, study design, collaborating with other colleagues, and communication.[5] However, to foster optimal potential in new researchers and to sustain a critical mass of researchers at all levels, some additional skills are required beyond those needed to do good research. Because primary care research is still developing, there is a serious shortage of experienced researchers to recruit as leaders, particularly individuals with leadership skills. This recommendation recognizes the need for explicit support to cultivate a cadre of effective research leaders.

Collaboration Strategies

Because of the diverse and multidisciplinary nature of primary care, improving communication among the researchers who contribute to its various disciplines is essential. Developing a critical mass of researchers will mean not only addressing the shortage of researchers in each constituent primary care discipline but also cultivating interdisciplinary linkages. Productive working relationships across disciplines are so essential that the ultimate success of primary care research depends on the success of these relationships.

Recommendation 6:

AHCPR's efforts to increase communication and linkages among the various primary care clinical disciplines as well as with other primary care researchers should be expanded.

AHCPR has demonstrated a commitment to primary care research, and thus has a unique potential to bring together researchers from the various primary care disciplines. Previous AHCPR-sponsored national primary care research conferences have been highly effective in increasing communication among primary care researchers in the various primary care disciplines. This conference should be continued on an annual basis. In addition, AHCPR should also support additional research in innovative methods development to expand the number and categories of issues studied in primary care.

Recommendation 7:

Additional resources should be made available to AHCPR to establish mechanisms to strengthen collaboration among researchers in academic primary care units and clinicians in primary care practice settings. In particular, specific resources should support the development of practice-based research.

Within the academic research centers there is tremendous expertise available for developing and refining innovative research methods. While these centers are appropriate sites for biomedical research, patients seen in these centers are highly selected, and not representative of patients seen in primary care settings. Hence patients seen at academic medical centers are not usually appropriate for studying the problems and processes of primary care.

Primary care practice settings are the appropriate sites to study many of the problems relevant to primary care. Unfortunately, individual primary care practices are limited in their capacity to contribute to this collaboration. First, many individual practitioners are too busy with clinical activities to be active participants in research projects. Second, the characteristics of an individual practice will not be sufficiently generalizable to provide information about primary care. Third, individual practitioners encounter too few examples of any given clinical problem to provide enough information to draw meaningful conclusions. The growth of practice based research networks in all primary care disciplines is one response to this need.[6,7] AHCPR should support these and other efforts to strengthen the collaborative activities that promote fruitful practice-based research.

Individual Career Strategies

Federal and non-Federal approaches currently used to develop researchers in biomedical fields are useful models for training primary care researchers.[5,8,9] Usually, research training occurs during a post-residency fellowship for physicians or post-doctoral experiences for other biomedical researchers. Similar training positions for primary care researchers must be developed, promoted, and funded. Fledgling researchers also need to anticipate a progressive program of research support throughout their careers in order to attract the best and the brightest to primary care research. Thus, a stable cadre of primary care researchers must be supported, including those at entry, mid-career, and senior levels.

Recommendation 8:

Federal agencies and private foundations should expand primary care research fellowships.

The need for increased funding for primary care research fellowships is acute. Individual fellowships, similar to those available to fellows who pursue training in the biomedical sciences, have been in short supply in primary care. The few fellowships available through the Veterans' Administration, Health Resources Services Administration, National Research Service Awards, and the Robert Wood Johnson Foundation, have been highly successful and need to be expanded. It is critical that additional Federal agencies support institutional as well as individual primary care research fellowships.

Recommendation 9:

Expanded funding should be made available to AHCPR to implement career development strategies for primary care researchers.

Junior, mid-career, and senior investigators should have available a variety of funding mechanisms. The discontinuation of the Henry J. Kaiser Family Foundation Faculty Scholar Award Program has increased the critical need for Federal and other private programs. The successful strategies used by the National Institutes of Health (NIH) to develop and maintain researchers in the biomedical disciplines are appropriate for primary care research. The AHCPR should institute awards for primary care beginning at the entry level, similar to the NIH's Clinical Investigator Awards and Physician Scientist Awards, Research Career Development Awards, Program Project Grants, Specialized Centers of Research, and MERIT Awards. Expanded funding should be available for investigator-initiated awards, as well as agency-initiated requests for applications focusing on priority areas in primary care research.

Recommendation 10:

The AHCPR should expand the availability of technical support for researchers developing primary care research proposals.

In view of the dearth of mid and senior level researchers in primary care, the ability of many promising individuals to develop as researchers may not be realized. Thus, there should be expansion of the role of AHCPR in providing direct technical support. The AHCPR should also explore other methods of expanding the availability of technical support for primary care researchers, including regional workshops.

Recommendation 11:

The Public Health Service should support predoctoral students in gaining primary care research skills.

As with other areas of research, future primary care researchers must be cultivated prior to selecting career pathways. Predoctoral individual fellowship awards have been used by the Public Health Service to support students in numerous research fields to allow the students to become socialized into the field and to increase research skills. The dual degree program of the NIH Medical Scientist is another model which the Task Force considered appropriate for training primary care researchers. This program allows physicians to obtain a Ph.D. degree in close proximity to the medical degree. These and other relevant strategies should be employed to promote primary care research.

In addition, the general medical/health professional curricula need to include entry-level content about research methods and analytic techniques relevant to primary care research. The AHCPR should offer contracts to disseminate model curricula that can be implemented in medical/health professional schools.

Conclusion

The need to increase capacity for primary care research is clear and urgent. The way to increase the capacity is to develop a primary care research community with the essential features outlined above at the national, institutional, collaborative, and individual levels. Only by addressing all of these features can a vital, productive primary care research community be nurtured that will help improve the health of the Nation.

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Federal Support for Physician Assistant Education

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As part of dual Federal health professions policy initiatives of the 1960's, the creation of the physician assistant (PA) profession was, along with the expansion of the number of physicians, intended to increase primary care access. Other initial objectives intended for PA's were to increase the capabilities of primary care physicians to extend health care to underserved populations and to provide cost-effective medical care and clinical preventive services in a variety of medical practice settings.

Despite the establishment of these initiatives more than 30 years ago, at present many Americans lack access to essential primary care services. Among the major barriers to increasing primary care access are the low number of primary care physicians relative to all physicians, educational and economic influences that attract health practitioners to the high-paying, technologically-oriented specialties, and continuing legal and legislative limitations on the potential contributions of nonphysician health practitioners such as physician assistants. While PA's have long been viewed as important adjunct practitioners in primary care, patterns of their utilization reveal that PA's, like physicians and for similar reasons, have been increasingly drawn to the nonprimary care specialties. A limitation hampering the full contribution of PA's to primary care is that, at present, Medicare laws, while providing fractional payments for inpatient services, permit reimbursement for PA services only in limited ambulatory settings.

The clinical abilities and considerable potential of PA's to provide cost-effective primary care medical services in rural and underserved areas and to meet Federal objectives and initiatives in primary care delivery have been successfully demonstrated over the past 25 years. Federal support for physician assistant educational programs through the Bureau of Health Professions (BHPr) of the Health Resources and Services Administration (HRSA) has averaged about $5,970,000 per year since 1972 (1). The future role of PA's in addressing improvements in American medical care, and the policy of continued Federal support of PA education, are relevant questions at this time, particularly in view of continuing issues in primary care access and delivery.

Background

PA's represented the creation of a brand new type of medical provider in the U.S. health system. The concept grew from manpower proposals addressing prevailing medical and social needs of the 1960's: the lack of primary care and consequent problems in access to care, the seeming failure of organized medicine to meet these societal needs, and a readily available group (ex-military medical corpsmen anxious to enter the civilian health professions field) upon which to build this nascent practitioner.

The notion was not particularly new. Physicians have employed many types of assistants throughout the history of medicine and in the health systems of many countries (2). The concept of the PA was propelled by the activist Federal health and social policies of the 1960's, which sought to redress existing health delivery problems by the twin policies of expanding physician education and supply, and by promoting the incorporation of nonphysicians. The PA concept was supported by organized medicine with the understanding that PA practice would be supervised by physicians and that the economic benefit derived from PA utilization would accrue to employing practices (3).

The idea for the PA was initially proposed in 1961 by the then-President of the National Board of Medical Examiners to the House of Delegates of the American Medical Association (AMA). Later, funded by a National Institute of Health grant, the chairman of the Department of Medicine at Duke University enrolled four ex-Navy corpsmen in a two-year medical-model physician assistant program. This program, the Child Health Associate Program of the University of Colorado, and the MEDEX Program of the University of Washington, provided the templates for the development of similar PA curricula in other major institutions across the country such as Yale, Johns Hopkins, and Emory. As the concept gained increasing acceptance in medical education, additional colleges and universities developed PA programs. Their curricula included intense basic science and clinical components, a strong primary care orientation, and periods of clinical experiences set mainly in ambulatory practice settings. A number of PA programs instituted rural preceptorship components. Students were either former military corpsmen or others with considerable health care experience.

A distinct advantage of PA's, particularly during the time of their introduction, was that they could be trained relatively rapidly and deployed in areas of health care need. PA's represented in a real sense, a short-term solution to the health provider shortage, while the apparent long-term solution, the training of increased numbers of physicians, took effect. In retrospect, few would have envisioned that the concept would survive, prosper, and develop into what it has become today.

Federal interest in the PA was apparent early on with Department of Health, Education, and Welfare support for development of a PA proficiency examination, for model legislation to amend State medical practice acts to permit PA practice, and funding for a variety of creative educational approaches to train nonphysician personnel. In 1969, the National Center for Health Services Research and Development funded pilot programs for the education of PA's, MEDEX (a type of PA), and NP (nurse practitioner) health providers resulting in the development of a number of different health professions educational programs.

With the development of accreditation standards for PA educational programs by the AMA in 1971, acceptance of the concept in medical education began to grow. The Comprehensive Health Manpower Training Act of 1972 authorized funding for PA education under section 774 of the Public Health Service Act. The three major objectives of the legislation were: 1) education of PA's for the delivery of primary care medical services in ambulatory care settings; 2) deployment of PA graduates in medically underserved areas; and 3) recruitment of increased numbers of residents of medically underserved areas, minority groups, and women to the health professions (1).

In 1976, the Comprehensive Health Manpower Act continued categorical support for PA education. The law authorized the Secretary of the Department of Health and Human Services, through the Bureau of Health Professions, Division of Medicine, of the Health Resources and Services Administration, to offer grants to educational institutions sponsoring PA programs. Now listed under Section 788(d) of the Public Health Service Act, this legislation has supported the education of at least 17,500, or over 70 percent, of the Nation's actively practicing PA's; in FY 1991, 40 PA programs received Federal funding. Table 1 shows the history of Federal support for PA education.

Barriers and Contributions

Initially, considerable legislative, professional, and economic barriers existed affecting the degree to which PA's could practice. The introduction of PA's into the medical care system required amending each State's medical licensing act, amending the medical staff by-laws of all hospitals, establishing an independent, national certifying body, which included mandatory periodic recertification, and convincing health care payors to reimburse for their services. The success of the concept was also predicated upon acceptance by physicians (who would employ them), patients (who would be treated by them), and numerous other health care workers (who would work with them).

Thus, considerable attention was paid to initial research findings on PA's and studies in general of nonphysician practice characteristics. During the late 1970's, Federal health policy groups such as the Office of Technology Assessment (OTA), the Institute of Medicine (IOM), and the Congressional Budget Office (CBO) published detailed policy analyses evaluating studies of PA impact and their practice trends and utilization patterns (4-7). Evidence from the large amount of health services research summarized in these reports confirms that PA's make numerous positive contributions to improvements in health care delivery and in many ways have fulfilled the expectations of their creators.

Most of the studies looked first at PA acceptance by patients. While little evidence suggests that patient satisfaction positively correlates with favorable technical outcomes, it was important to initially assess how patients felt regarding treatment from a nonphysician. Most studies of PA's showed high levels of patient acceptance particularly after more than one encounter with the provider. Factors found to account for PA acceptance included increased time spent communicating with patients and support by the employing physician (6).

Since physicians conceived and orchestrated the development of the PA concept, it should not be surprising that physicians generally accepted PA's and remain well satisfied with their work. The reality of the strong demand for PA's in the medical marketplace speaks not only to extensive acceptance, but also to their staffing effectiveness in a variety of practice settings. PA's have become solidly incorporated into the fabric of medical care practice. They have assumed positions in many primary care practices with physicians. They also have filled roles in settings traditionally avoided by physicians such as geriatric facilities, inner city clinics, substance abuse clinics, and correctional health systems.

A broad analysis of the research evidence on PA productivity, quality of care, and cost-effectiveness was included in the report of the Congressional Office of Technology Assessment (4). This document looked at both PA's and other nonphysicians and included an extensive literature review. The report stated that "on the basis of available data, it appears that PA's do alter the production of medical services in a manner that can improve access to such services and reduce production costs", and further concluded that "the use of PA's results in productivity gains and cost reductions." It noted that the financial benefits derived from the cost-effectiveness of PA's accrue primarily to the physician or employing institution, but emphasizes that when PA's are used in a prepaid group practice such as an HMO, the economic gains of using such practitioners may serve to keep overall patient premium costs down. HMO's and other types of managed care systems have strong incentives to contain costs, and their structure and size provide the opportunity to capitalize upon the economics of scale and the division of labor that the utilization of PA's can offer. Similarly positive conclusions were voiced in a later detailed OTA report that looked comparatively at all three types of U.S. nonphysician providers (PA's, NP's and certified nurse midwives {CNM's}), and concluded that they make important contributions to health care by improving the quality and accessibility of medical services and by increasing the productivity of medical practices and health care institutions. The report concluded that extension of Medicare coverage for nonphysician services in practices in underserved areas would improve health care service delivery to needy populations (7).

Studies from ambulatory care settings reveal that PA's are clinically productive at a rate of about three-quarters that of physicians. Given that PA salary costs are roughly one-third to one-fourth that of physicians, it is evident that PA's are cost-effective to employing practices. The data also show that PA's performing at these rates of clinical productivity maintain quality of care at levels "indistinguishable" from that of physician care. PA practice orientation tends to include an emphasis on interpersonal communication, patient education, and preventive care (8) (9).

PA's in Practice

At present, about 22,000 PA's are employed in full-time clinical practice in all States and the District of Columbia. Current practice trends in the PA profession include an increased proportion of women PA's, increased numbers of PA's practicing in institutional settings, and falling numbers in primary care specialties.

Over 80 percent of all PA's who have graduated from educational programs remain in full-time active practice. About 55 percent work with primary care physicians (defined as family physicians, general internists, or general pediatricians), although the overall proportions of PA's in these specialty areas has declined in recent years.

The demographic profile of PA's has changed markedly since the profession's inception. While it remains a young profession (mean age of 34), the proportion of female PA's is now about 43 percent (in the 1970's it was less than 10 percent). Fewer than 10 percent are minorities. Roughly 30 percent are military veterans.

About a third of all PA's are in private office practice (either solo or group), a bit less than a third practice in hospitals, and the remainder work in a variety of institutional health settings such as HMO's (eight percent), the military (seven percent), correctional facilities (three percent), and rural health clinics (4.5 percent). Notable employment trends reveal falling proportions of PA's in family practice and growing proportions in positions in the medical and surgical subspecialties (see Table 2). Until recently, the proportion of PA's in hospital settings has seen a rapid increase, but may now be leveling off (see Table 3) (10).

There is also a "hidden network" of primary care which consists of services provided by PA's who may work with a specialist physician (and thus be classified as a specialty PA). Often a PA will assume generalist functions in a specialty practice. While the overall percentage of PA's in family practice and the primary care specialties has declined over the past several years, PA's are still much more likely to practice in primary care specialties than physicians.

PA Education

There are 54 accredited PA educational programs in the United States graduating about 1,200 students each year. Most are in academic health centers or colleges/universities and award the baccalaureate degree after two years of study, although there is an increasing trend toward masters level education. The standards of PA education are established by the AMA's Council on Allied Health Education and Accreditation (CAHEA). The typical program has about five full-time faculty members including the program director.

In 1991, 40 PA programs received Federal support through BHPr, averaging $128,122 per program. The mean program budget for PA programs was $409,745. Since the beginning of the concept, internal support from sponsoring institutions has increased steadily while external (primarily Federal) support has remained at about one-third of total program revenues (11). This trend reflects increasing self-sufficiency on the part of PA programs, since the level of Federal support over the past seven years has remained relatively constant.

The educational philosophy of PA programs has always been broadly based primary care. This generalist preparation gives PA students the appropriate foundation in primary care medicine, yet also permits entry into nonprimary care areas. Nearly all programs place emphasis on the teaching of patient interviewing and communication skills, and give a strong orientation in clinical prevention. PA programs have been originators of many innovations in health professions education, including model strategies for the incorporation of primary care and clinical preventive orientations to medical education, advanced methods to teach interpersonal and behavioral skills, and the development of effective strategies to deploy primary care practitioners to medically needy areas. In response to the increasing demand for PA's, a number of new PA programs have appeared over the past several years. The PA Programs of the U.S. Air Force and Navy have been reinstated.

PA Students

At present, the majority of PA students are white females with higher academic credentials but fewer mean years of health care experience than possessed by earlier recruits to the profession. Since 1984, females have comprised over 60 percent of enrolled PA students, and minorities represent about 20 percent of enrollees since 1987. Most students enter PA training holding either a baccalaureate degree or substantial coursework in the premedical sciences and usually a minimum of one year of direct patient care experience.

Trends in the patterns of recent PA program graduates reveal a declining number entering primary care specialties from 1985 through 1989; this trend reversed in 1990 where nearly 60 percent of the program graduates entered primary care. The proportion of graduates entering primary care versus nonprimary care specialty also has a geographic influence. More PA graduates of programs on the East Coast entered nonprimary care specialties, whereas greater numbers of graduates of programs in the middle and far Western States were employed in primary care.

Mean expenses incurred by students for PA education (total of tuition, books, equipment, and fees) in 1990 was $12,495 for resident students and $16,511 for nonresident students. Over 70 percent of PA students received some type of financial assistance averaging $6,268 (11). In 1991, 82 PA students were selected for National Health Service Corps scholarships, marking the first entry of PA's into this PHS program. This initiative, along with the recent decision to include PA students in PHS Commissioned Corps sponsored programs, provides incentives for PA's through the COSTEP (Commissioned Officer Student Training and Extern Program) to complete their clinical training and subsequently work in PHS sites such as community and migrant health centers and facilities of the Indian Health Service and the Bureau of Prisons. The HRSA is also restructuring its current package of health professions loan assistance to give increasing support to providers who choose primary care careers. This would include a phase-out of the present Health Education Assistance Loan Program and replacing it with lower interest loans (12). PA students ought to be eligible for this new loan option.

Roles in Graduate Medical Education

An unanticipated but significant role of PA's has been their increasing utilization in augmenting the medical staffing of institutions sponsoring graduate medical education (GME) programs. In these instances, PA's substitute for physicians or portions of a physician resident on a teaching service, providing continuity of care commonly in medicine, surgery, or pediatrics. The increase in PA's employed by public and private hospitals, which rose from about 14 percent of PA's in 1976 to nearly 30 percent in 1990, came about when several large physician residency programs began to use PA's to compensate for cutbacks in program size. Thus, using PA's in these roles has allowed academic health centers to better balance resident production and specialist numbers with clinical service demands. This has resulted in overall cost savings, improvements in continuity of care, and richer educational experiences for residents in many surgical and internal medicine residency programs. Using PA's in these settings has become increasingly common, and in addition has spawned about a dozen "PA residency" programs, which provide PA graduates an additional year or more of specialty training experience (usually in either surgery, pediatrics/neonatology, or emergency medicine) and offer to institutions an in-house supply of PA's to meet patient care and/or educational demands (9).

The utilization of PA's as hospital house staff is likely to continue to increase as more States impose limitations on the number of hours worked by physician residents. The President of Montefiore Medical Center in New York, where such regulations have been in place since 1989, noted that these circumstances have required an increase in the medical staff work force of 49 percent, and that large increases in physician residency numbers to fill these positions is unlikely. Thus, they depend heavily on PA's to augment clinical services. Similar circumstances in many other institutions will require an increase in the supply of PA's. A concern with this approach at present is the availability of enough PA's to meet these needs, as well as meeting increasing demands in primary care. Even Montefiore, which has operated a surgical PA residency program for the past 20 years and has 150 authorized positions for PA's, has had difficulty recruiting enough PA's to meet service demands (13).

A sizeable proportion of PA graduates are likely to continue to be attracted to hospital-based positions given the high demand which brings with it higher salaries. This may serve to divert PA graduates away from positions in primary care. Yet a trend reported by PA program directors is that a number of hospital PA's, after several years of working in the inpatient setting, move on to positions in ambulatory practice settings (11). This may represent a balancing of salary and lifestyle preferences, since the higher salaries seen among hospital-based PA's are often linked to greater total hours worked and "on call" responsibilities.

PA Education: Orientation and Priorities

A key innovation pioneered by PA programs that still has great relevance to today's primary care provider distribution issues is the demonstration of how practitioners can be employed in medically underserved areas after completing preceptorships in those areas. Deployment of PA's to health professions shortage area (HPSA's) and medically underserved areas (MUA's) has long been a high priority to PA education and of HRSA Grants Programs for PA's. For example, specific funding priorities for grants awarded in 1991 were: 1) enrollment of underrepresented minorities; 2) PA programs providing clinical training experiences in a HPSA, a MUA, a migrant health center, a PHS Area Health Education Center (AHEC), or other government-sponsored health center caring for underserved populations; 3) PA programs offering education in HIV/AIDS clinical care and prevention; and 4) PA programs offering instruction in risk management and quality assurance. Other major areas highlighted in PA education have included the development of a model substance abuse curriculum for health professionals, clinical and didactic experiences in geriatrics, exposure to occupational medicine and other areas in public health, and a general orientation to prevention in the delivery of health care.

A high proportion of funded PA programs have curricular components focused on identifying and utilizing rural and other medically underserved clinical training sites (usually in the form of preceptorships). This educational focus has resulted in a distribution of PA's to areas of need; currently, over 30 percent of the profession are in practice in communities of less than 50,000 population, and 14 percent in communities of less than 10,000 population (10). PA program responses to Federal grant initiatives targeting other medically needy populations, including special focus on topics such as HIV/AIDS, substance abuse, adolescent pregnancy, immunization levels, risks of cancer and heart disease, reduction of infant mortality, and other serious problems seen disproportionally among medically underserved populations, have also been impressive. Over half of all PA programs have developed specific educational curricula to address the health and medical problems of inner-city populations. Many PA programs have built strong linkages to Area Health Education Centers, private rural clinics and practices, migrant health centers, and other primary health care settings. A recent initiative to further promote PA participation in rural health has been to select six PA's for migrant health clinic fellowships co-sponsored by HRSA, the Association of Physician Assistant Program, the American Academy of Physician Assistants, and the National Rural Health Association.

The Question of Continued Support

While some in health policy circles would say that PA's were a limited or half-way measure in dealing with the primary care shortage, and what was and perhaps still is needed to rectify the problems of health care access are more primary care physicians, most would agree that PA's have been a very successful innovation in reaching the goals intended with their creation. Some observers would assert, however, that there is no longer a legitimate Federal role for the continued support of health professions training, either physician or nonphysician. It appears presently unpopular on Capitol Hill to support continued Federal subsidy of the expansion of the medical profession. Yet, few question continuing existing support for the education of many types of health professionals. But with the major exception of the cost implications for the medical care consumer, the surplus of physicians is not viewed as a Federal problem requiring a Federal solution (14). By the same token, however, medical provider supply considerations are believed by many to be extremely relevant to health care access issues, and of late, have become a key focus of domestic policy issues involving health care, particularly among those citizens who cannot afford health insurance. This would also apply to businesses, large and small, that cannot afford to provide costly health insurance for their employees.

The number of physicians in U.S. medicine has been increasing since the late 1970's and continues to increase. Some believed then that primary care access problems would be solved by an expanding physician population that would diffuse into underserved areas. This has had, at best, a limited effect. It was also assumed that the expansion of the physician supply would buffer to some degree the trend toward physician specialization. But the current roughly 68 percent versus 32 percent distribution of specialist versus generalist physicians is felt by most to be just the opposite of what distribution should be. The initial question seems to be: given at least an adequate, if not excessive, supply of physicians, what is the role for PA's?

That question has remained germane in health professions policy discussions of the past decade and continues to be relevant today, not only for PA's, but for NP's and CNM's as well. When the report of the Graduate Medical Education National Advisory Committee (GMENAC) forecasted in 1980 that there would be a surplus of 70,000 physicians by 1990, and perhaps double that by 2000 (15), no groups were more concerned than PA and NP professional societies and educational programs. Since most of the support for the nonphysician movement was garnered during the times of a physician shortage, many viewed an excess of physicians as not only a signal for the discontinuation of Federal funding for PA and NP educational programs, but as an expectation of the exit of the nonphysician concept from the U.S. medical scene (16).

What is interesting, however, is that the perceived negative impact of the expansion of the physician supply on the vitality of the PA and NP professions has not materialized. In fact, in the 1980's, despite the steadily increasing physician/population ratio, the demand for and utilization of PA's in the medical marketplace, particularly during the later years of the decade, has expanded dramatically. The stature of PA's in medicine is now, without question, on the rise. PA's are now commissioned officers in all uniformed services; PA's were the first nonphysicians to obtain Medicare reimbursement; the profession has pioneered a working system of mandatory national recertification of clinical proficiency; 32 States grant PA's prescribing privileges; and PA's are recognized by the U.S. Public Health Service Preventive Services Coordinating Committee as providers of clinical preventive services. PA's can now be found in nearly all medical practice settings, including those involving clinical research, high-technology clinical service delivery, teaching, and medical regulation and quality assurance. Their low salaries relative to clinical productivity has kept demand high. Educational programs in recent years have not been able to graduate sufficient PA's to meet demand and program directors estimate in 1991 that there are at least seven positions available for each new PA graduate (11).

PA's have begun to influence health professions policy discussions as more health care administrators, legislators, government executives, and policy makers recognize PA capabilities in health care. As the profession has grown, many in its ranks have risen to senior roles in medical education, clinical care, clinical research, public health, health organization administration, and health care policy research.

After examining data from managed care organizations and reviewing GMENAC projections of nonphysician delegation levels, Weiner and colleagues in 1986 noted that PA's and other nonphysician providers could soon be competing with physicians for positions in some primary care settings. They stated that acceptance of the nonphysician role is no longer an issue; what is unclear is the degree of their future involvement in medical care. The answer will depend on their availability, costs, and the practice patterns of the increasing supply of physicians (16). The future for PA's will also depend upon their willingness to continue to accept salary levels considered modest in relation to their professional responsibilities.

Increased Need for PA's

Since its inception the PA profession has fulfilled an expanding role in patient care in the United States. PA programs, particularly HRSA grant funded programs, have developed effective means of educating primary care practitioners, and of providing a training orientation that continues to be responsive to the medical needs of patient populations and national priorities. The track record of PA education in training students in and deploying graduates to medically underserved areas, both rural and urban, has been positive.

A hallmark of the physician assistant profession has been its flexibility and willingness to fill gaps in health care delivery services. In 1980, the U.S. Department of Labor estimated that more than 40 percent of PA's were practicing in areas underserved by physicians; PA's have moved into primary care roles in settings such as nursing homes, rural areas, inner-city clinics, prison systems, small community hospitals, and other health facilities that remain short of physicians. PA's are limited in the degree that they can determine their practice sites. They cannot, by themselves, rectify primary care access problems in some settings, for example rural areas, where a supervising physician must usually be present or available by phone for a PA to practice.

Because of these successes, most health policy observers and the Federal Government foresee no diminution in demand for PA health professionals, and in fact see the opposite. These groups also look to PA's to play an important future role in policy approaches to increase primary care access to medically underserved populations (17). Since the specialty distribution of physicians in graduate medical education indicates that the proportion of physicians engaged in generalist medical care is likely to decline in the coming years (18), it seems rational to reinforce America's primary care cadre by supporting the increased participation of PA's.

Some in the past have worried that should Federal support for PA programs cease, a number would close. Lack of institutional support has been a factor in the demise of several PA programs in the past. For those programs sponsored by an academic health center or a medical school, financial pressures affecting these institutions are at present considerable, and in a number of instances, may require the continuation of external support to survive. Nevertheless, as has been demonstrated, PA programs have unceasingly "institutionalized" their operations and become solidly established in most sponsoring institutions. It also should be mentioned that a number of PA programs receive other forms of public support through either the military medical system or through State appropriations; private philanthropy in the 1970's also played an important role in the development of a number of PA programs.

Cost-Effective: To Whom?

In evaluating the overall value of PA's in the U.S. medical care system, usually the issue for Federal policy makers centers on cost versus benefit, a relationship in which PA's appear to well justify society's investment in their education. Past analyses by the Federal Government of the cost-effectiveness of PA's have framed the question in terms of who benefits from this attribute (4). Should it accrue to the physician employer of the PA, the patient, or society as a whole? The Federal Government legislative policy approach to educate and support PA's over the last 20 years (see Table 4) had the clear intent that they would practice in primary care areas and to a large extent they have fulfilled this expectation. Implied in the appropriation of the relatively small monetary investment of $120 million was that the utilization of PA's might also result in lowering of the unit cost of medical care service delivery. PA's appear to be able to perform many medical, particularly primary care, services at a level of quality comparable to physicians, yet they do so at a much lower expenditure of resources.

But in a pluralistic society with an entrepreneurial medical care system, it is not surprising that once introduced, the utilization patterns of PA's would be strongly influenced by physicians and their practice economics. And it is also evident that the role of the Federal Government, particularly in relation to domestic social programs, has often been to stimulate or support the private sector. Numerous examples in the health sector include the funding of biomedical research through NIH (largely to universities), the financing of health care provided by private physicians and hospitals (both profit and nonprofit) to Medicare and Medicaid beneficiaries, the construction and modernization of nonprofit hospitals, and the training of many health professionals including physicians, dentists, nurses, pharmacists, and nonphysician medical providers like PA's (19).

The contributions of PA's bear direct economic benefit to employing practices and institutions and multiple indirect benefits to society in the form of the delivery of high-quality medical care to needy populations. They extend the capabilities of physicians and health care facilities to deliver medical care, and in a number of settings, help keep health care costs down.

Federal Support of PA Practice

In 1986, as part of OBRA legislation (PL 99-509), Federal support for increased PA utilization came forth in an amendment providing authorization for Part B Medicare payment for PA clinical services. Rates are at levels lower than the prevailing physician rates for assisting at surgery (65 percent), for services delivered in hospitals (75 percent), and for services delivered in geriatric facilities (85 percent). Payments are made to employing practices or institutions, and do not at present cover ambulatory or clinic services (except in HPSA's). A clear barrier to the maximal utilization of PA's in primary care are practice economic considerations. Some analyses have shown that, depending upon the type of specialty practice, the degree of economic advantage that can be gained by adding a PA to a practice versus hiring another physician can vary considerably. A PA in a specialty practice may generate much more revenue than when employed in a primary care practice (20). Increasing reimbursement incentives for primary care practices to hire PA's would allow them to be more competitive in this segment of the medical marketplace. A policy approach consistent with increasing the capabilities of PA's to deliver primary care in needy areas would be to authorize Medicare payments for their services in ambulatory settings. Other forms of Federal support of PA practice are statutes like the Rural Health Clinics Act, which offers incentives for PA employment in Medicare and Medicaid rural primary care settings. This legislation has been only marginally successful due to regulatory and payment inconsistencies.

Conclusions and Recommendations

In view of the advantages that PA's bring to medical practice and their effectiveness in meeting past, current, and future Federal policy goals in health, a strong case can be made for the expansion of PA training and utilization in the U.S. health system. In the medical marketplace of this decade, there is and will continue to be an increasing need for primary care providers. Private group practices, as well as managed health systems, will be increasingly interested in employing practitioners who will provide generalist medical services. HRSA predicts that this increased need for primary care providers will comprise PA's as well as generalist physicians (21).

PA's continue to hold proven effectiveness and considerable future potential as part of Federal incentive programs designed to improve primary care access to needy populations at reasonable costs. To meet this expected demand, it will be necessary to increase the production of PA's. With expanded Federal support of PA education, and by maintaining current funding priorities for training orientation and deployment, PA's can be instrumental in achieving improvements in access to primary health care.

Legislation currently under congressional consideration would raise current PA funding levels to allow educational programs to increase their enrollments and permit new programs to be developed, thus expanding the production of future PA's. Proposed authorization levels would provide for appropriations of $7 million for FY 93, up only $1 million from projected 1992 figures, $8 million for FY 94, and $10 million for FY 95. These increased levels of funding would permit programs to expand existing capacity, to recruit additional program faculty, to continue to develop innovative primary care education approaches, and to create additional strategies in deployment of primary care providers to medically needy settings.

Financial incentives appear to significantly influence the professional practice behaviors of health providers, be they physician or nonphysician. If the Federal Government is seeking to address problems in primary care access, certain policy directions involving PA's seem clear. Continuation and further development of PA education resulting in an increased supply of these providers, and linking this expansion to amended Medicare reimbursement policies to increase PA employment in primary care settings, would hold multiple benefits for the U.S. health system and for citizens who need primary care.

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Table 1. Health Resources and Services Administration*
Support for Physician Assistant Educational Programs, 1972-1991.

Authority	Fiscal Year	Amount Funded	Programs
Health Manpower Educational Initiatives Awards, PHS Contracts	1972	$6,090,109	40
	1973	6,208,999	39
	1974	8,129,252	43
	1975	5,994,002	40
	1976	6,247,203	41
	Subtotal	$32,669,565	
Public Health Service Act, Sections 701, 783, and 788; Grants Programs for PA's	1977	$8,171,441	39
	1978	8,685,074	42
	1979	8,453,666	42
	1980	8,262,968	43
	1981	8,019,000	40
	1982	4,752,000	34
	1983	4,752,000	34
	1984	4,414,850	34
	1985	4,442,076	37
	1986	4,548,000	37
	1987	4,275,000	36
	1988	4,549,973	37
	1989	4,445,200	37
	1990	4,697,680	38
	1991	5,000,000	40
	Subtotal	$87,927,728	
	Total Amount Funded	$119,597,293	

* Formerly Health Resources Administration

SOURCE: Health Resources and Services Administration, (1).
Bureau of Health Professions

Table 2. Trends in PA Specialty Distribution, by percentage, 1974-1991.

SPECIALTY	1974 N=939	1978 N=3416	1981 N=4312	1984 N=6552	1987 N=10692	1991 N=11734
Family Practice *	43.6	52.0	49.1	42.5	38.7	31.3
General Internal Medicine *	20.0	12.0	8.9	9.2	9.5	9.9
General Pediatrics *	6.2	3.3	3.4	4.1	4.0	2.4
General Surgery	12.1	5.5	4.6	5.1	8.8	9.2
Surgical Subspecialties	6.8	6.2	7.7	12.5	13.8	14.3
Emergency Medicine	1.3	4.9	4.5	6.4	6.5	7.9
Medical Subspecialties	3.9	6.3	2.7	4.8	7.1	7.3
Occupational Medicine	1.8	2.7	3.1	4.1	4.1	4.2

SOURCES: Secondary Analysis. The 1981 National Survey of Physician Assistants Association of Physician Assistant Programs, 1984; The 1984 Masterfile Survey of Physician Assistants, American Academy of Physician Assistants, 1985; The 1987 Masterfile Survey of Physician Assistants, American Academy of Physician Assistants, 1987; Seventh Annual Report on Physician Assistant Educational Programs in the United States, 1988-1989, (D. Oliver), Association of Physician Assistant Programs, 1989; General Census Data on Physician Assistants, American Academy of Physician Assistants, 1991; Seventh Report to the President and Congress on the Status of Health Professions, 1990, Department of Health and Human Services, 1991.

* Specialties defined as primary care specialties by HRSA.

Table 3. Trends in PA Practice Settings, by percentage, 1974-1991.

PRACTICE SETTING	1974 N=902	1978 N=3416	1981 N=4312	1984 N=6552	1987 N=3309	1991 N=11734
Private Office ^	57.1	34.7	35.8	34.5	33.2	32.7
Hospital	13.8	23.7	29.5	31.3	28.6	28.5
Ambulatory Clinic *	13.9	23.4	24.9	17.7	17.0	15.3
Health Maintenance Organization	-	-	-	-	6.9	7.2
Military	15.1	18.2	9.3	7.3	7.6	6.3

SOURCES: Secondary Analysis. The 1981 National Survey of Physician Assistants Association of Physician Assistant Programs, 1984; The 1984 Masterfile Survey of Physician Assistants, American Academy of Physician Assistants, 1985; The 1987 Masterfile Survey of Physician Assistants, American Academy of Physician Assistants, 1987; Census Data on Physician Assistants, American Academy of Physician Assistants, 1991.

^ Either solo or group practice

* Includes community-based public clinics, privately sponsored clinics, inner city clinics, substance abuse clinics, student health centers, correctional medicine facilities, and rural health clinics.

Primary Care Practitioners: If the Demand Increases, How Will Educational Institutions Respond?

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The title of this paper anticipates an increasing demand for primary physicians. However, while a need certainly exists, this need has not resulted in more medical graduates selecting primary care careers. People say they long for a personal physician but most willingly accept primary care services from multiple subspecialists. Few physicians of any specialty have difficulty finding patients. The net income of procedurally oriented specialists has risen rapidly while that of generalists has barely kept pace with inflation. Most medical schools have not sensed levels of demand for primary physicians that have caused them to alter their educational programs to influence graduates to select primary care. Teaching hospitals and faculty are dependent upon subspecialty residents and fellows to staff their inpatient services and, therefore, vigorously recruit students to these specialties. It is not surprising that demand among medical students for careers in primary care is dramatically declining and residency positions in the primary care specialties are going unfilled.[1]

Various strategies might be adopted to reverse current trends. Consequently, I begin this paper by addressing how an increased demand for primary physicians relative to other subspecialists might develop. I then explore how academic medical centers might respond. Finally, responses to increased demand will entail fundamental changes in the staffing, organization, and financing of academic medical centers. These changes also have implications which must be considered.

How Might the Demand for Primary Care Physicians Increase?

The Medical Marketplace: Demand

Economists define "demand" as the quantity of a product or service which an individual is willing to purchase at a given price. Demand is consumer-defined. It is based upon consumer desire for the service and the ability to access the service. Access to the service may be limited for financial or geographic reasons. "Demand" must be contrasted with "need." In health care, need is medically defined as a service that experts feel would help the individual.

Today, demand is increasing both for primary care services and for secondary and tertiary services. Multiple factors, including advances in biomedicine, increasing population, and the aging of the population fuel this increasing demand. The availability of services also stimulates demand. When consumers have insurance and services are available, these services are likely to be used.

While overall utilization of services is increasing, the Nation faces a paradox in which large segments of the population are geographically and/or financially underserved. These people have needs that have not been translated into effective demand. With approximately 34 million U.S. citizens medically uninsured and perhaps even more underinsured,[2] Weiner estimates that universal health insurance will increase the demand for primary care services by 12 to 15 percent.[3]

Fueled by availability of insurance and of services, the Nation's appetite for health services seems insatiable. In 1990, the United States spent 12.2 percent of its gross national product on health care and is projected to spend 14 percent in 1992. By the mid-nineties, we shall have a trillion dollar health industry. We are being forced as a Nation, both from an economic perspective and a social perspective, to ask the questions: "How much health care can we afford?"[4,5] "Is it appropriate to invest 14 percent of the GNP in health while only seven percent goes to education?" "How do we limit utilization of unnecessary services while we provide for unmet need?" Many now say that these issues will lead to major health care reform.

Physician Supply

In the 1960's and early 70's, first year medical school enrollment doubled from approximately 8,000 to 17,000 students annually in order to address what was perceived as a national physician shortage. In addition, large numbers of foreign-trained physicians were encouraged to immigrate to this country. Today, the number of new physicians produced annually is more than twice the number retiring from practice. Consequently, total physicians more than doubled between 1965 and 1990 and will increase another 33 percent to 765,000 by 2010. Most groups studying physician manpower now concur that we have an increasing oversupply of physicians.[7,8,9] Medical economists have long stated that increasing the number of physicians results in increased doctoring.[10,11,12,13] Whether the increased utilization of medical services is patient-induced, physician-induced, or both is moot. The fundamental point is that increasing numbers of doctors will result in additional medical services and expenditures.

At the same time, the proportion of physicians entering primary care is dramatically falling.[1] The AAMC's graduation questionnaire demonstrates that interest among graduating medical students in the primary care specialties of family practice, general internal medicine, and general pediatrics has decreased from 36 percent of graduates in 1982 to 22.5 percent in 1989. This decline in generalism is not a short-term change. It is part of the general movement toward increasing specialization in medicine which has dominated American medicine over the past half century. With current trends, only one-fifth of practicing physicians will view themselves as primary physicians early in the next century. Clearly, need for primary physicians has not been translated into increased supply.

The Marketplace

Feldstein describes three markets comprising the medical care sector: the manpower market; the institutional market; and the educational market.[14] He postulates that in each market, prices and quantities are ideally determined by an interaction of supply and demand. Put simplistically, an increasing demand for primary care services in the manpower market should result in increased income for generalists relative to other specialists. As the income of generalists rises, increasing numbers of medical students should be induced to seek generalist careers. However, payment for primary care services has not increased at rates comparable to procedural services. Further, primary care services, typically provided by generalists, may also be provided by physicians in other specialties. Thus, increasing demand for primary care services in the manpower market has not translated into incentives that have induced medical students to seek primary care residencies in the educational market.

Actually, student demand for education in the various specialties may be influenced more by the educational market than by the manpower market. The manpower marketplace is remote for medical students. On the other hand, the milieu of the academic medical center in which the educational market is located is "reality."

Medical students' perceptions of various specialties are developed in the tertiary care setting of teaching hospitals.[1] These academic medical centers are populated by subspecialists. The selection of medical students, the curriculum, the organization of the medical school, and the tertiary care services provided by the teaching hospital all provide a powerful socializing environment that fosters student interest in the subspecialties. Students, while vaguely aware of the relative rewards of practice in the various specialties, are more acutely aware of the practice milieu of the tertiary care center. Much of what medical students know about primary care is hearsay rather than direct experience, and hearsay frequently reflects positive attitudes about specialism and negative perceptions about generalism.

This educational market has its own local "minimart" that directly seeks to staff intensive care and other inpatient services of the tertiary care center. Just as marketing is utilized to stimulate demand in the "free market," so too in academic medical centers, faculty actively recruit graduates to the subspecialties. Residents and fellows contribute both to the income of faculty and to that of the hospital. Medicare reimbursement for graduate medical education creates incentives for hospitals to hire residents rather than other personnel. For example, anesthesiology residents make less than nurse anesthetists; and the hospital receives additional direct and indirect educational payments from Medicare. It receives no supplemental payment for the nurse anesthetist. Certainly the hospital incurs additional educational costs when it supports a residency. Nevertheless, the progressive increase in numbers of residency positions since implementation of Medicare prospective payment in 1983 demonstrates that residency education in high-income generating specialties is economically desirable for academic medical centers.

In summary, I suggest that the educational market, rather than the manpower market, effectively defines the specialty distribution of physicians in the United States. The tertiary care educational setting and financial incentives induce faculty and teaching hospitals to recruit graduates to enter subspecialties. Medical students existing in the educational market are much less conscious of the manpower market based in the community and are more likely to become subspecialists like their mentors. At the same time, the impact of the manpower market upon demand for generalists is blunted by the fact that specialists provide many primary care services.

The community-based manpower market may have greater impact upon residents nearing completion of their training. Practice opportunities in cardiology,for example, when combined with the recruiting efforts of cardiology faculty, may induce some internal medicine residents to enter cardiology. For family practice residents, regular hours and higher incomes may influence some who originally had planned small town practice to work in emergency rooms and convenience clinics. Likewise, high debt, while not having a demonstrable impact upon specialty choice of medical students, may be important in the decisions of senior resident physicians to select higher paying subspecialties or affluent practice locations.

Translating Increased Demand for Primary Care Services Into Increased Production of Primary Physicians

If current situations persist, fewer and fewer medical school graduates will seek generalist careers. Primary care services increasingly will be provided by subspecialists and our health care system in the next century will be based upon subspecialists with only one-fifth of physicians serving as generalists. This has serious negative implications both for efficiency and costs of care and also for geographic distribution of physicians.

Increased demand for primary care services should translate into an increased student demand for primary care careers. However, this is unlikely to occur until incentives are changed in both the manpower and educational markets.

In the manpower market, young physicians will be encouraged to select generalist careers by a more equal system of reimbursement, and by delivery systems which better meet the lifestyle needs of today's graduates. The new Medicare fee schedule has the potential to reduce discrepancies in reimbursement across specialties for Medicare patients. However, its impact will be slight until similar schedules are adopted by other third-party payers.

Health Maintenance Organizations also are becoming a major source of increased demand for primary physicians. Primary care physicians constitute approximately half of HMO physicians.[15,16] As increasing proportions of the population enroll in HMOs, these systems have greater needs for generalists and relatively lower requirements for subspecialists. This will induce a third compartment effect, as described by Tarloff, in which an increasing oversupply of specialists will occur in the fee-for-service sector.[17] Anecdotal evidence indicates that many HMO's, especially on the west coast, are offering highly attractive salaries and lifestyle benefits as they compete for primary physicians.

Multiple approaches can be taken in the educational market. These might increase student demand for primary care careers through direct financial incentives, through increased emphasis on medical student education in primary care, and through limitation of residency positions in specialties in oversupply.

Direct incentives for medical students to select primary care residencies can be provided by higher resident salaries, loan forgiveness, and lower interest rates. For example, the State of Oklahoma has increased salaries of residents in family practice by $5,000 annually and provided an additional $12,000 increase in annual salary if they commit to practice in rural shortage areas.[18] The Federal Government and many States provide loan forgiveness for primary physicians who commit themselves to practice in manpower shortage areas. Some in Washington are suggesting that students who commit themselves to primary care specialties should be eligible for lower interest rates for educational loans. Time will tell the effectiveness of these incentives.

Thus far, most academic medical centers have not felt a responsibility to reorient curricula to provide an increased emphasis on primary care. However, this may change. Many medical schools are being confronted by State legislatures demanding that they increase their production of generalists. The Texas legislature has mandated third-year family practice clerkships for all Texas medical students. The Gatlin bill, currently before the Kansas legislature, links continued levels of State funding to increasing the University of Kansas' production of generalists. The Tennessee, Virginia, Pennsylvania, Washington, and other legislatures are also reflecting their displeasure with the inadequate number of generalists produced. Major philanthropy is also very much involved both in articulating the issues and in providing incentives. The PEW Commission for the Health Professions is developing a report entitled, *Healthy America: Practitioners for 2005*. The Robert Wood Johnson Generalist Physician Initiative will provide grants to medical schools to assist them to increase their production of generalists, and the Kellogg Academic, Community-Based, Primary Health Care Center Program helps schools increase teaching in community settings.

The most important changes in incentives must occur in graduate medical education. Simply increasing the number of primary care positions will not in itself solve the problem. Residency positions in the primary care specialties already are going unfilled. The net impact must be to educate more generalists and fewer subspecialists.

Congress has not yet utilized Medicare payments for graduate medical education to influence specialty mix, but could do so in several ways. For example, it could limit funding of specialties in oversupply to reduce incentives for teaching hospitals to recruit residents into subspecialties. It could require that payments to hospitals or consortia of hospitals be conditioned upon half of funded and filled positions being in primary care. Total positions funded might be reduced to contain the continued increase in numbers of physicians. Consequent savings in GME payments could be utilized to fund education in ambulatory care settings. The New York State Council on Graduate Medical Education already has increased direct and indirect payment for residents in primary care specialties and reduced that in subspecialties.

Direct regulation of positions either by the profession or by governmental commissions also can modify the generalist/specialist mix. Canada stipulates that half of its residency graduates be in family practice. Alternatively, specialties themselves can exercise "birth control." During the 1980's, the number of residency positions in the surgical specialties remained virtually constant, while positions in most other specialties have rapidly increased.

The perceived availability of residency positions does seem to affect students' specialty preference. In 1982, 23.8 percent of U.S. medical school graduates indicated plans for a career in one of the surgical specialties on the AAMC Graduation Questionnaire. In 1989, 21.9 percent sought surgical careers.[1] This lack of increasing interest probably resulted from students' knowledge that few positions were available and occurred even though surgical incomes were markedly increasing and several of the subspecialties also offer very attractive lifestyles. Similarly, in Canada, one of the reasons there is no shortage of applicants for family practice residencies is that residency positions in the specialties are limited to half of all positions.

How Can Academic Medical Centers Respond?

The previous section of the paper identifies the need for an increased proportion of generalist physicians and suggests means whereby this need may be translated into increased demand by trainees for primary care careers. Incentives can be provided for trainees to select generalist careers and disincentives to select specialty careers. The most effective disincentive to enter subspecialties will be to limit the number of positions in those specialties in oversupply.

Educational institutions can further increase the likelihood that students will enter primary care by selecting appropriate applicants, providing an educational milieu supporting primary care, and providing residency training in primary care settings.

The most important first step must be for medical faculty to make a formal commitment to the education of generalists. Most faculty have not thought about the responsibility of their educational institution to respond to specific manpower needs. They typically perceive that their role in undergraduate medical education is to prepare competent physicians capable of entering any specialty and tend not to recognize that the educational market systematically socializes students to select subspecialties. Many faculty think that categorical residency programs in internal medicine and pediatrics prepare generalists, but most programs directly influence students and residents to enter subspecialties.

Consequently, faculty should establish objectives that define the proportion of generalists to be educated at both the undergraduate and graduate levels. They should make these objectives known, should modify programs to accomplish the objectives, and should evaluate programs in the context of the objectives. The influence of faculty upon career decisions of trainees cannot be overstated. Katz found that students who changed specialty preference during medical school were more likely to make the change because of negative perceptions about the first specialty rather than for perceived positive attributes of the second specialty.[19] If faculty enthusiastically supported students' interest in generalist careers rather than discouraging this interest, many more graduates would enter practice as primary physicians.

With established objectives, a series of programmatic changes would occur. Schools would select applicants most likely to enter generalist careers, provide an institutional milieu supportive of generalist education, and develop a comprehensive primary care curriculum throughout undergraduate and graduate medical education. While the literature provides much information to suggest ways in which to increase the number of family physicians, much less information is available for the production of general internists and general pediatricians. Nevertheless, lessons learned in family practice probably are applicable to the other generalist specialties.

The magnitude of the task is staggering. Only 22.5 percent of 1989 medical school graduates indicated they planned primary care careers on the AAMC Graduation Questionnaire. Only 13 out of 100 medical schools had over 30 percent of graduates planning primary care careers. Only one has more than 40 percent. (Personal communication, August Swanson, M.D., AAMC, 3/92.)

The Role of Medical School Admissions

The selection of medical students is, at best, an imperfect science. Most research in this area has been devoted to predicting academic success in medical school and far less to the impact of admissions on specialty choice. Data in the family practice literature demonstrate that selecting students with an interest in family practice and then placing them in an educational program supporting family practice produces more family physicians.[20-27] There are no comparable data for general internal medicine and general pediatrics.

David Babbott's cohort study of the 1987 graduating class of U.S. medical schools suggests that the students' stated preference of specialty may be the most undervalued predictor of specialty choice.[28] He linked information from the MCAT Questionnaire taken while applicants were in college with their stated specialty preference on the

AAMC Graduation Questionnaire (GQ) completed during the last semester of medical school. The likelihood that a graduate would select a stated specialty averaged only 22 percent. However, when stated specialty preferences on the GQ are linked to groups of related specialties, the findings become more interesting. Forty-seven percent of those indicating family practice and 44 percent preferring pediatrics on the MCAT Questionnaire ultimately selected one of the three primary care specialties. Fifty percent of those indicating a desire for general surgery selected a career in surgery or one of its subspecialties. Unfortunately, an MCAT preference for general internal medicine was not a good predictor of a generalist career. This may reflect a lack of understanding on the part of applicants of the role of internists and of subspecialists.

In choosing a specialty, students match their personal capabilities and values with their perception of the skills required and gratifications anticipated from practicing the specialty. Consequently, additional knowledge about the values, gratification systems, lifestyle needs, and also the service and people orientation of the student may increase our predictive capability. For example, Retzler's study suggests that the number selecting family practice will increase if students have some of the following characteristics: 1) come from a small town; 2) are married and over 25; 3) attended a public college; 4) have had people oriented service activities; and 5) have humanistic orientation and activities. Many of these predictors also are likely to be relevant to primary care careers in general.[29] Unpublished studies at Jefferson Medical College suggest that medical students who planned to enter subspecialties at graduation were more likely to have considered business and law as alternative careers. Those entering family medicine were much more likely to have considered teaching and other service-oriented careers. (Personal communication, Howard Rabinowitz, M.D.) They also have found that lower anticipated income from practice was an independent predictor of choice of family practice.[30]

Our current medical school admissions process, which places greatest emphasis upon grade point average and MCAT scores, selects individuals who major in science, achieve success in science, obtain gratifications in exploring scientific topics in depth, and enjoy being a final authority in the area. This may result in admission of students who are more likely to enter subspecialty fields. Another approach long used at McMaster Medical University Medical School might have merit.[31] That medical school has defined basic academic performance standards required for admission. The medical class is then selected from all applicants fulfilling these academic requirements without further regard to the academic record.

While some might fear that such a process would weaken the quality of the graduates, a study of University of Missouri students suggests otherwise.[32] At that school, the best predictor of medical school success as measured by the Dean's letters of evaluation for internship was the average assessment by admissions interviewers of the maturity of the applicant at the time of interview for admission to medical school. In this school, which emphasized academic performance in the selection process, further emphasis on interviewers' assessments of the applicants' maturity would have been warranted. One can hypothesize that greater emphasis on social commitments and service orientations of applicants might increase the likelihood that graduates will seek primary care careers without impact on academic performance.

Medical School Curriculum

As noted earlier, most medical school curricula provide a milieu that fosters selection of subspecialty careers. They are heavily biomedically oriented, emphasize inpatient and subspecialty medicine, provide subspecialty role models, and are hospital based. Logically, if one wishes to increase the proportion of those selecting generalist careers, one would modify the curriculum to emphasize content areas relevant to primary care, provide primary care experience, provide generalist role models, locate education in settings in which generalists flourish, and provide these experiences before most students make final specialty decisions.

The provision of primary care requires not only a knowledge of the biomedical sciences but also a basic understanding of human behavior, issues of probability, and the doctor/patient relationship. Consequently, the basic science of generalist practice should emphasize the behavioral sciences, clinical epidemiology, and biostatistics. Generalist faculty and basic scientists in these areas should be responsible for this education.

A primary care clerkship provides a milieu in which to learn and apply one's knowledge of both content and the functions of primary care.[33] The content problems of primary care practice include common, acute, ambulatory illnesses, primary and secondary prevention, and chronic illness. The functions of a primary physician include caring for unselected patients, evaluating and managing their unselected problems, recognizing subtle manifestations of serious disease, providing preventive care, caring for their chronic illnesses over time, and coordinating services of consultants.

Kassebaum has shown that a required third-year family practice clerkship is associated with 15 percent of graduates entering family practice compared with seven percent in schools without such a clerkship.[34] Some schools have developed clerkships one or two half days/week over several years--thereby providing medical students with continuity in management of patients. Campus-Outcalt has shown that the overall percentage of graduates entering family practice is associated with the total duration of curricular time.[35] It seems likely the greater the orientation to primary care education, the greater the selection of primary care specialties.

Generalist faculty should have a central role not only in primary care education, but also in the general professional education of medical students. Representatives from a consortium of primary care disciplines have recently recommended development of a problem-oriented introductory clerkship in clinical medicine. They recommend that this clerkship, taught by generalists, should be located in the second year of medical school, occupy a full semester, and provide basic skills in data collection, interpretation of data, clinical diagnosis, decision making, doctor/patient relationship, etc. This general clerkship would then be followed by discipline oriented clerkships including those in primary care.

The foundation of medicine lies in the community, not in tertiary care centers. It is there that primary care is central and there that most medicine is practiced.[37] Consequently, this setting may be best for primary care education. Those schools that have been most successful in preparing students for careers in family practice all have large amounts of community-based primary care experience.[38] These include East Carolina, Wright State, Southern Illinois, Michigan State, etc. Interestingly, community-based education is also a central theme in traditional medical schools that have been successful in placing a high percentage of graduates in family medicine, as at the University of Minnesota[22,38] and the University of Washington.[21,38] The development of area health education centers (AHEC's) programs has provided a major opportunity to increase medical student education in the community.[27,39] However, some AHEC's have been organized as specialty-oriented advanced secondary and tertiary care centers which may be no more primary care oriented than traditional academic medical centers. A logical step to educate primary physicians would be for each medical school to develop its own Primary Care AHEC. Each AHEC could provide faculty for both undergraduate and graduate education in primary care.

Graduate Medical Education

In 1991, only 13 percent of those matching in the National Residency Matching Program were in primary care residencies (family practice, medicine-pediatrics, and primary care internal medicine and pediatrics). An additional 34 percent matched in categorical programs in internal medicine and pediatrics. While many categorical programs provide significant primary care experience, most emphasize subspecialty care even in their ambulatory experiences. Few have rotations outside the parent discipline. Speaking from the bias of a family physician who originally trained in internal medicine, categorical residencies in internal medicine or pediatrics do not adequately prepare general internists or pediatricians for primary care careers. They prepare hospital-based, inpatient-oriented physicians, not physicians who are prepared to spend the majority of their practice in the community caring for acute undifferentiated problems of ambulatory patients, providing preventive services, and managing patients with chronic illness.

The orientation of primary care residencies is different. They provide longitudinal continuity primary care practices for 25 percent or more of a resident's time. These residencies recognize the breadth of problems seen in primary care, and therefore, provide ambulatory rotations for residents in other specialties such as ENT, orthopedics, dermatology, etc. They emphasize behavioral problems and behavioral determinants of illness behavior. Psychologists and psychiatrists typically consult and teach in their primary care practices. Above all, programs are built around primary physician role models who work with residents both in the ambulatory and inpatient settings.[40,41] In the family practice residency program at the University of Missouri, 60 percent of a resident's time is spent under the guidance of family physician faculty in both the outpatient and inpatient setting.

Primary care residencies are doing what they set out to do. They train physicians who then serve as generalists. AAFP data demonstrate that 91.6 percent of family practice graduates in 1991 entered practice following their residencies and are distributed nationally similar to the population as a whole.[42] Less information is available concerning graduates of primary care residencies in internal medicine and pediatrics, but available data also support the effectiveness of these programs.[43] McPhee has shown that 89 percent of the primary care internal medicine graduates at University of California-San Francisco are serving as general internists.[44] Obviously, selection of medical school graduates who are committed to generalist careers contributes to the success of these programs. However, few would disagree that training in primary care settings with supervision by fine generalist role models strongly promotes generalist careers.

As demand increases, primary care residencies in each of the three disciplines will have to expand markedly. Residencies in family practice should also have major expansion in order to address rural shortages. As internal medicine and pediatrics attempt to increase their primary care orientation, they can pursue two routes. They might increase primary care tracks, or they might expand the primary care orientation of categorical programs. I believe the former is the correct route but suspect the latter will be pursued. The latter will be a major step forward but is unlikely to provide a primary care experience of adequate breadth for generalist practice or to motivate high percentages of graduates to enter primary care. A true primary care residency track would provide a more appropriate and efficient route for internal medicine and pediatrics to prepare generalists while the traditional track would continue to be the preferred route for those planning subspecialty careers.

Implications for Medical Schools and Teaching Hospitals

An increased demand for primary physicians has tremendous implications for the staffing, organization, and financing of medical schools, teaching hospitals, and primary care disciplines. Some of these are obvious. Medical schools will need to recruit many additional generalist faculty to make operational a central role for generalists in the education of medical students and to expand primary care residency programs. Faculty development programs will be needed to prepare generalist academicians. In addition, community-based faculty should be recruited.

Undergraduate medical education and graduate medical education can no longer be viewed as "hospital-based." The hospital must think of itself more as a teaching health center with major emphasis on ambulatory services and relatively less on inpatient services. Ambulatory care programs will need to be modified to create primary care practices. Indeed, ultimately half of all patient visits might be to these primary care practices. Medical schools will need to view themselves as institutions "without walls." Educational programs will progressively move to the community with creation of educational arrangements with HMOs, private practices, community health centers, etc. Development of primary care AHEC's will provide the faculty and the setting for expanded primary care education.

Organizationally, the medical school will need to recognize a central role for generalist faculty in the curriculum and inpatient care programs. The implications of such a move for each of the primary care disciplines are enormous. In 1978, I published a Sounding Board article in the *New England Journal of Medicine* entitled, "Primary-Care Education in Multiple Specialties: Opportunities and Dilemmas."[45] In the same issue, Gerald Perkoff published a Sounding Board article entitled, "General Internal Medicine, Family Practice or Something Better?"[46] The issues addressed are even more relevant today than yesterday. To what degree can or will internal medicine and pediatrics realign themselves to provide primary care education? I personally am skeptical that these departments, as their subspecialties progressively "balkanize," will succeed in making the realignment. To what degree can family practice expand to meet the needs of primary care education? Again, I am skeptical that family practice has the academic "people resources" required to accomplish the job. Alternatively, the three primary care disciplines can cooperate to make necessary changes.

The typical organization of primary care activities into departments of family medicine and sections of general internal medicine and general pediatrics results in three separate programs with little intercommunication and a lack of critical mass in each. A department of primary care or generalist medicine is a logical way to bring these groups together. This new department would assume central responsibility for the general professional education of a physician as was outlined earlier. It would provide medical student education in primary care and would be the focus for residency education in each of the three primary care disciplines both at the academic medical center and in the community. It would be the organizational unit responsible for assuming care for the large primary care populations which will progressively be needed by academic institutions as managed care expands. The department would also have faculty in behavioral sciences, clinical epidemiology, and biostatistics. Its research agenda would be the content problems of primary care, clinical decision analysis, health services research, etc. Finances, territoriality, and disciplinary chauvinism are powerful deterrents that would need to be overcome.

The financial implications of increased medical student and resident education in primary care may, on the surface, appear devastating for academic medical centers. The primary care ambulatory setting does not generate large revenues and has significant overhead costs. Education of medical students in the ambulatory setting is costly.[47,48,49,50] The revenue generating capacity of residents, while contributing to the costs of the ambulatory center, probably does not cover the total costs of residency programs.[51] However, few would deny that the Nation is progressively moving toward managed care. Academic medical centers are finding they are not competitive as they seek to contract with HMO's because of their lack of a primary care base. These forces provide incentives for academic medical centers to develop complete systems of care for populations of patients. Indeed, these forces will also stimulate medical centers to create their own practices in the community which also will provide educational opportunities for trainees. While these primary care practices may be "loss leaders" for the institution, they will be increasingly important as sources of referral.

Teaching hospitals will have to become less dependent upon subspecialty residents to provide service in high-revenue generating areas. Nevertheless, many residents still will be present to assist in these services. In contrast, many non-teaching hospitals successfully provide high-quality, tertiary care without residents. With these changes, teaching hospitals will become relatively more dependent upon nurse clinicians, physician assistants, and staff physicians.

One can anticipate that government will catalyze changes through incentives, disincentives, and regulation. New York State already provides proportionately increased direct and indirect educational reimbursement for primary care residents. The Federal Government could limit total residency positions funded, set standards for proportions of primary physicians, and shift funds to support education in the primary care. It should maintain and enhance training grant funding in the primary care specialties. Title VII funds provide fundamentally important support for some of the Nation's best programs and today provide far less real dollar support than in the 1970's. Primary care AHEC's funded by matching State and national funds should be developed as a means to encourage development of primary care education to the community.

In conclusion, our health care system is dependent upon a strong primary care infrastructure. Any plan to improve access to health care and to control costs must ultimately address needs for primary care manpower. Major changes in the funding of graduate medical education should be utilized to increase the education of generalists and reduce education of subspecialists. These changes, while creating dilemmas for academic medical centers, will also provide powerful incentives to modify educational programs at both the undergraduate and graduate levels. As a result, student demands for education in the primary care specialties will increase, and we shall be more responsive to the needs of the public.

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Funding The Training of Non-physician Providers: Can The Federal Government Do More To Address Personnel Needs in Underserved Areas

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I have been asked to discuss the role of the Federal Government in funding the education of nurse practitioners (NP's) to serve patients in medically underserved areas. Before I begin, I want to explain how the term NP is evolving and expanding. The term "nurse practitioner" is frequently used by the lay public as a "catch-all" term and can cause confusion. When nurses talk about nurses in advanced practice, they can be referring to NP's, clinical nurse specialists (CNS's), certified nurse-midwives (CNM's), and certified registered nurse anesthetists (CRNA's). The words "nurse practitioner" have traditionally meant a registered nurse who has completed a formal program of advanced educational preparation beyond the basic requirements for licensure as a registered nurse, which is true of all nurses in the four advanced practice roles I mentioned. The term NP, however, has historically designated a nurse who is prepared to function independently in the delivery of primary care in a variety of settings. By primary care, I mean (a) a person's first contact in any given episode of illness with the health care system that leads to a decision of what must be done to help resolve his problem and (b) the responsibility for the continuum of care, i.e., maintenance of health, evaluation, and management of systems and appropriate referrals. Specific, traditional NP responsibilities include, but are not limited to, health assessment, physical examinations, development of a plan of care, management of minor or acute, self-limiting conditions and chronic illnesses, teaching and counseling of individuals, families and groups, health promotion and disease prevention activities, and coordinating services and referral when appropriate to other health professionals.

Sometimes the lay public and Congress consider the words "nurse practitioner" and "clinical nurse specialist" to be interchangeable because those roles are blending. CNS's traditionally have been master's prepared specialists in a clinical nursing area who function in an acute care setting, but their responsibilities have expanded to the point where they need the NP assessment skills. Conversely, since chronicity is increasing and patients are staying in the hospital for shorter periods, NP's need some of the acute care skills historically reserved for CNS's. For example, we now have mental health nurse practitioners who are educated in the CNS model, neonatal nurse practitioners who work exclusively in high-risk, tertiary level hospitals and acute care nurse practitioners who re-frame the work of first-year medical and surgical residents into a nursing model and work in secondary and tertiary level hospitals.

For the purpose of this paper, I will use the term NP in its traditional sense, but please keep in mind others may use it in a more expansive manner.

Background

The involvement of the Federal Government in the NP role "parallels the development of the nurse practitioner movement and reflects a collaborative effort between the Federal Government and the nursing profession. This effort began in the early 1960's in part because of mutual goals to improve the quality of health care and increase the availability and accessibility of primary health care services." The above quotation is from an article by Denise Geolot, Deputy Director of the DHHS/USPHS Division of Nursing entitled "Federal Funding of Nurse Practitioner Education: Past, Present and Future" (1990, p. 159). She goes on to clarify that the Federal Government has "provided support for programs preparing nurses for expanded roles as well as funding for studies and research on the role, practice and effectiveness of expanded role practitioners." Geolot's paper is a seminal presentation on the historic role of the Federal Government in preparing primary care nurse practitioners. Her paper as well as two other reports provide excellent historic information on this issue. One is the report "Toward Quality in Nursing" written by the Surgeon General's Consultant Group on Nursing (1963) to provide the cornerstone for the first Nurse Training Act of 1964. This added Title VIII to the Public Health Service Act and identified the appropriate role of the Federal Government in ensuring adequate nursing services for the Nation. The other report "Extending the Scope of Nursing Practice: A Report of the Secretary's Committee to Study Extended Roles for Nurses" (1971) also added significantly to this body of knowledge.

However, the current and future role of the Federal Government is less clear. Over the last few years, the administration's budget has eliminated funding for NP programs. Congress has consistently re-authorized the nursing authorities and appropriated those funds.

As this paper is being written, the amending and re-authorization of Title VIII of the Public Health Service Act is in the Conference Committee. The persistent conflict between the Executive branch and the Legislative branch about the need to fund these nursing programs and, by extension, their importance, is troublesome.

With more than 37 million uninsured Americans and millions more underinsured for primary and preventive health care services, America is a Nation in crisis. The unwillingness and/or inability of consumers to take responsibility for their own health leaves us with a country that has shameful teenage pregnancy rates, infant mortality rates, substance abuse problems, and increasing chronicity to name a few. Secretary Sullivan's Healthy People 2000 (1991) has set the following goals:

> **First,** to increase the span of healthy life by preventing premature death, disability, and disease and enhancing the quality of life.

Second, to reduce health disparities among Americans; that is, improving the health of population groups that are now at highest risk of premature death, disease, disability--the economically, educationally, and politically disadvantaged.

Third, to achieve access to preventive health services for all Americans. Approximately 18 percent of all Americans and 31 percent of those without either private or public health insurance have no source of primary health care. These inequities must be addressed and the disparities eliminated in order to decrease our health care costs.

If we are to achieve these goals, the country needs to move NP's into the mainstream of primary care as alternative providers of high-quality, cost-effective care.

This is even more critical since there has been a diminishing interest in primary care among medical school applicants (Colwell, 1988). American Association of Medical Colleges data show a pervasive trend toward increasing sub-specialization and away from generalist practice (Colwell, 1992, p. 387). Colwell goes on to emphasize that specialties in which medical students' interest is declining have in common an orientation to generalist practice, a perception that work hours are unpredictable, and lower anticipated income. These data suggest that it is unlikely that a sufficient number of physicians will be available to meet the needs of a health care system that will expand the role of health maintenance organizations, increase the emphasis on preventive and maintenance services, and incorporate at least some aspects of universal access to care.

Public officials are seeking safe and economic methods to deliver quality health care to indigent populations. The relationship between low-birth-weight (LBW) babies and the absence of prenatal care is well documented (Moore et al, 1986; Scholl et al, 1987; Showstack et al, 1984). The Office of Technology Assessment (OTA) estimated that for every LBW birth averted, between $14,000 and $30,525 in newborn and long-term health care costs could be saved (OTA, 1988). OTA also analyzed the cost-effectiveness of expanding Medicaid coverage to all poverty-level pregnant women in an effort to provide them with early prenatal care. Their conclusion was that such expansion would be cost-effective and would be a good investment for the Nation (Graveley & Littlefield, 1992, p. 180). Such expansion could occur with greater use of NP's if the barriers to practice were reduced.

While health care costs are growing at more than twice the rate of inflation (Graveley & Littlefield, 1992), there are at least 6,400 NP positions vacant due to frustrating barriers to practice such as limits on scope, limits on reimbursement availability, and limits on prescriptive authority, which prevent large numbers of these advanced practice nurses from entering and staying in the field (Pearson, 1992, p.14).

The remainder of this paper is organized around issues related to the three academic missions of education, research, and practice, and discusses the role of the Federal

Government as it can and does influence all three areas relative to nurse practitioner education in advanced practice roles.

Education

Title VIII of the Public Health Services: Current Roles

A major component of the mission of any educational program is teaching. Title VIII of the Public Health Service Act provides for two kinds of educational assistance--institutional support for nursing schools and financial assistance for nursing students. Institutional support is currently available to benefit nurse practitioner students through the following programs in the Division of Nursing in the Bureau of Health Profession, HRSA:

- The NP/Nurse-Midwife Program (Section 822a) provides grants to institutions to train NP's and nurse-midwives to work in a variety of settings.

- The Advanced Nurse Education (Section 821) provides grants to schools to prepare nurses at the master's or doctoral level for advanced practice roles.

- The Special Projects Program (Section 820) provides grants to Schools of Nursing and other institutions to improve nursing practice through projects that increase the knowledge and skills of nursing personnel and enhance their effectiveness.

- The Professional Nurse Traineeships Program (Section 830) provides grants to Schools of Nursing for assistance to full and part-time students.

- The Nursing Education Opportunities for Individuals from Disadvantaged Backgrounds (Section 827) authorizes grants and contracts to increase nursing opportunities for persons from disadvantaged backgrounds.

Other governmental assistance to NP students comes from:

- The Nursing Student Loan Program (Section 837 & 839) of the Student Assistance Division of the Bureau of Health Professions, HRSA. This program authorizes 10-year, 6-percent interest loans of up to $2,500 per academic year (up to $10,000) to students. Monies come from the school's revolving fund which is replenished as loans are repaid.

- The Loan Repayment Authority (Section 537 & 837a) of the Bureau of Health Care Delivery and Assistance. It works with the National Health Service Corps and corporate loan repayment programs to authorize repayment of education loans for nurses who agree to work in certain shortage areas and facilities.

It is obvious that the Federal Government sees the support of students as an important role. It is equally obvious to those of us who attempt to utilize these opportunities that there are still glitches in Title VIII programs that need to be resolved:

1. Professional Nurse Traineeships

   A problem of long standing was that the rules and regulations of the Professional Nurse Traineeships Program (section 830) required students to attend on a full-time basis. This became even more of a problem since demographics overwhelmingly indicated that many graduate nursing students are older, carry heavy adult financial responsibilities quite separate from their student role and can attend graduate programs in nursing on a part-time basis only. (About two-thirds of Vanderbilt's graduate nursing students are full-time and this reflects national trends.)

   The Advisory Committee of the USPHS, Division of Nursing, took a proactive role in noting these demographic changes and encouraged various nursing constituencies to request a change in the rules and regulations to make part-time students eligible. In fact, this change did occur partly as a result of efforts initiated by the Advisory Council, but it was painfully slow in coming.

   The new trend in graduate nurse practitioner programs to accept non-nurses who seek the Master of Science in Nursing (MSN) as their first professional degree has also created some problems. These non-nurse students sit for the NCLEX-RN exam either before or immediately after graduation. Nurse educators lobbied for several years to change language in the Professional Nurse Traineeship Program from "nurses" to "individuals" so that these non-traditional students, who would be new, advanced practice nurses in fields with acute shortages such as nurse practitioners, would be able to receive the federal Professional Traineeship dollars that have traditionally been reserved for nurses with BSN degrees. This change has been included in 1991 legislation (HR.3508 and S.1993) to re-authorize Federal support of nursing education and is in the Conference Committee.

2. Title VII Loans for Disadvantaged Students Program within the Division of Student Assistance

   The Federal Government targets minority recruitment and retention monies to schools that have a certain number of minority students and minority faculty already on board. Many graduate NP programs that have a minority representation at or above the national enrollment average and that would like to raise their minority enrollment even more are excluded and disqualified from even applying if they have been unsuccessful in recruiting a minority faculty member for a regular faculty position. This takes on added significance when one realizes that by 2005, one in three Americans will be a minority. The need for minority nurses with nurse practitioner advanced practice skills will escalate dramatically. It seems unfortunate that some schools are disqualified for not having minorities on its regular faculty, given the extremely short supply of minority faculty members and given that many do have minorities as adjunct or clinical faculty members. Rather, it seems that minority students who are enrolled in nursing programs at the graduate level need help and support so that they may some day be faculty themselves and help resolve the extreme shortage of minority faculty members. This legislation also currently serves only people seeking a first degree in nursing, therefore, a minority with an Associate or Bachelor's degree in nursing is not eligible to use this support to pursue an MSN. The legislation needs to be broadened or new legislation needs to be proposed to assist these schools.

3. The Nursing Education Opportunities for Individuals from Disadvantaged Backgrounds Program

   This program is targeted to entry level students, which means that people who are already nurses are not seen by the Federal Government as disadvantaged and are therefore disqualified from receiving monies. It comes as no surprise that a minority student who is an economically disadvantaged AD or BSN graduate might be educationally disadvantaged as she/he pursues the demands of a master's level practitioner program, where much more abstraction and conceptualization are needed, especially in one of AD to MSN programs. In 1989 and 1990, a total of 9,251 minorities graduated from AD and BSN programs. Those who wish to become NP's are now ineligible to receive any additional aid from this program for further studies since they 1) are now RN's and 2) would be pursuing a nursing degree beyond the entry level. This results in many talented people remaining in lower paid, less demanding nursing positions because they simply do not have the money and educational skills to successfully negotiate graduate work without additional support. This legislation should be broadened or new legislation should be introduced to cover these people because it is clearly within the role of the Federal Government to facilitate the entrance of minorities into NP roles.

4. The Loan Repayment Authority (Section 536 & 837a)

   This authorizes the National Health Service Corps and corporate loan repayment programs to graduates who agree to work in certain shortage areas and facilities. There are several problems with this program:

   a. There is no way of assuring a superb applicant who is worried about money that she/he will be able to receive one of these service payback loans and so students look elsewhere.

b. The graduate nurse practitioner program has no way of knowing whether a graduate was successful in obtaining the loan repayment program unless the graduate happens to let the school know.

c. The Federal Government has no way of telling schools how many of their graduates were actually funded. This is critical information that schools need in order to make the program attractive to students.

d. While the March 14, 1991, Federal Register contains lists of counties in States determined to have a shortage of health providers, and which counties are sites for loan forgiveness service paybacks, graduate nurse practitioner programs are unable to identify specific employers in the county who might qualify under this program. Further, students cannot negotiate at the beginning of their education with a potential employer for work after graduation. This adds to the enormous tracking/placement problem and needs to be resolved.

Title VIII of the Public Health Service: Possible Future Roles

As part of the Federal Government's role in nurse practitioner education, the National Advisory Council on Nurse Education of the Division of Nursing has the opportunity to influence movement toward cost-effective curricula that advance clinical knowledge and incorporate a beginning appreciation of the financial underpinnings of nursing as a practice discipline producing both expense and revenue. Experimentation with curriculum is possible under current guidelines of the Division of Nursing, but there are some unresolved problems the Advisory Council and various nursing constituencies need to address.

1. Issues of "Maintenance" Funding in Advanced Nurse Training Programs and Nurse Practitioner Programs

   Nurse practitioner graduate programs can be funded under either the Advanced Nurse Training Program or the Nurse Practitioner/Nurse-Midwife Program. The authorizing legislation provides for both types of grants to meet the costs of projects for the following three purposes:

   - to plan, develop and operate programs,
   - to expand programs, or
   - to maintain programs.

   Each has a different peer review committee. Those funded under the Nurse Practitioner/Nurse-Midwife Program have been able to obtain funding for "maintenance" purposes for extended periods of time because there is a clear philosophy of supporting these programs for as long as their need is convincing.

Those NP programs funded by Advanced Nurse Training have encountered some difficulties in competing for maintenance funds. Also, the post-project funding section in these applications frequently gives the dean an exercise in creative writing--the reality is that all nurse practitioner programs require significant resources and faculty-to-student ratios that result in higher fixed costs; schools are trying desperately to meet the manpower needs for NP's while struggling with budget realities. The nursing community knows that if they seek Advanced Nurse Training grants with a "to maintain" purpose, those grants will have great difficulty achieving a high enough priority score to secure funding.

It is very difficult for nurse practitioner programs to become self-sufficient. While the purpose of "maintaining" a nurse practitioner program seems to be valid from the point of view of NP/NM peer review committees, Advanced Nurse Training peer review committees tend to question whether maintenance funding should share equal priority with the first two purposes since they have fewer funds overall than does the Nurse Practitioner Program. The reality is that reasonable maintenance funding should be available if the nurse practitioner program is meeting a need. But it is also true that the Nurse Practitioner/Nurse-Midwife Program is better funded than Advanced Nurse Training, whose peer reviewers try to be good stewards of the funds they have.

Another problem with "maintenance" funding of NP programs under Advanced Nurse Training guidelines is that, even to be considered for maintenance funding, a nurse practitioner program must somehow expand rather than simply maintain its programs. This must occur even though there is a separate purpose for expansion. This expectation of maintenance and expansion at the same time forces schools to expand courses and/or students and/or faculty. I fully support the idea that programs receiving maintenance money should try to expand the number of students and, de facto, faculty. However, if they are doing what they are doing well, they should not be required to add extra courses; in fact, they should be rewarded for increasing the number of students in current courses, and for using new teaching technologies that will raise the student-to-faculty ratio. This would give deans a better chance to write achievable post-project funding plans.

The Division of Nursing Advisory Council on Nurse Education needs to address the "maintenance" issue because our grant-supported curricula over time can become bloated, expensive, and increasingly inefficient. Research must investigate where the Federal dollar is spent more effectively--in supporting fewer programs over longer periods of time--or supporting more programs for shorter periods of time. Research must also determine the critical mass of students who should be enrolled to produce the most cost-effective results.

Interestingly, in the House version of the Appropriations bill, "maintenance" of Advanced Nurse Training Programs has been deleted as a purpose. While that might make this argument moot, it could also impose a hardship on some Nurse Practitioner Programs that successfully received funding under that purpose.

2. Mechanisms for Nurse Practitioners to Re-tool into Another Practitioner Specialty as Patient Population, Family Demands or Interests and Needs Change

   It is to our advantage to keep nurse practitioners in nursing! As a country, our college-educated population will change careers up to five times and will hold 12-13 different jobs. One of the best kept secrets in nursing is that one can change careers without leaving nursing by re-training into a new specialty area--for example, changing from an Adult Nurse Practitioner to a Pediatric Nurse Practitioner. Most graduate programs are set up so that a post-master's option into a new specialty area can be completed in three semesters of part-time study--but there is no program support or stipends available for these returning nurses because they are already nurses and already have a degree. The Federal Government may assist by making low cost loans available to those nurses if they agree to work in a medically underserved area in their new specialty after completion of their studies.

3. Duplication in Graduate School Curricula

   An initiative from the Division of Nursing Special Projects is needed where graduate programs are encouraged to collaborate with each other via the new teaching technologies so that the didactic portions of the beginning Research courses, the beginning Pathophysiology courses, the beginning Issues & Trends courses, and the beginning Theory courses in graduate programs could be delivered via multimedia and computer-assisted instruction to a number of cooperating nurse practitioner programs. Faculty could then individualize the content in seminars and small group discussions. A great deal of faculty dollars are spent by every graduate nurse practitioner program on those courses--and we all teach them. Title VIII Special Projects already has purpose no. 3 which speaks to distance learning: consortia arrangements using new technology in a more cost-effective manner.

4. Professional Isolation

   Funding for distance education consortia for NP faculty in remote sites while remaining at their sites could address the professional isolation that many NP's encounter in rural areas, as well as the need to update clinical skills. Many rural-based NP's do not have the time or the money to attend continuing education workshops that take them away from their clinics for several days or even hours. Placing an NP in a rural practice is not sufficient if she/he cannot stay current and leaves after several years.

5. Faculty Fellowships

The Pew Foundation Report, Healthy America: Practitioners for 2005 (1991, p.21) emphasizes that "The teaching-learning process should promote inquiry skills together with the ability to manage large volumes of information" and goes on to say that these skills will be demanded by practitioners as the volume of information available and the need for informed decisions becomes simply too great for traditional memorization strategies. Faculty in graduate nurse practitioner programs are well aware of this need, but the shortage of qualified faculty frequently results in heavy teaching loads where it is simply easier to teach from the same notes and in the same way year after year. A Faculty Fellowship initiative is needed so that schools with expertise in these new skills can offer short intense courses or workshops to faculty from other schools. These faculty can share the new teaching technologies and support each other at their home schools as they work to develop new methods. This approach can result in more efficient and less costly curricula and can meet the needs of adult learners far better than large lecture halls.

6. Ethics

The moral fabric of our society is fragile. Many students come into nursing without a strong background in moral decision making, yet they will be on the front lines as technological advances collide with human boundaries. An initiative from the Federal Government to support the development and explication of ethical clinical decision making throughout graduate studies would serve our patients well. This is currently possible through the Title VIII Advanced Nurse Education Program and Nurse Practitioner/Nurse-Midwife Program but frequently gets overlooked in course development and needs to be highlighted.

7. Total Quality Management

Continuous improvement and outcome measures are new buzz words in our society and foster the expectation that good outcomes, rather than process, can be easily identified and rewarded. Many community agencies are barreling into "continuous improvement" projects. It is essential that our nurse practitioner graduates learn the concepts of continuous improvement and total quality management since they will encounter these in their practice settings. The Pew Report (1991) emphasizes that Deming's "continuous improvement" prototype for industry is compatible with the new concept of practice guidelines. The Institute of Medicine (1990) concludes that the components of the continuous improvement model can identify and assess various processes of delivering health care and allow us to observe the effectiveness of quality improvement innovations among different agencies and practice sites. The Pew Report (p. 14) emphasizes that projects are needed to define educational outcomes and to measure progress toward achieving them as they relate to the education mission. Title VIII Special Projects could identify a specific purpose to support "continuous improvement" projects that examine outcomes relative to cost and quality of curriculum and the teaching environment. This would allow faculty and students to acquire the knowledge as well as the experience of the "continuous improvement" process in course work, curriculum development, and their own academic organization.

Practice

A second component of the mission of nursing education programs is practice:

1. School of Nursing Primary Care Clinics

   It is also no longer acceptable for graduate programs to seek permission for their students to be guests in hospitals and agencies. It is essential that Schools of Nursing demonstrate that they can own and operate primary care clinics, either alone or in collaboration with another community agency or with the hospital outpatient clinic. (It is also essential that graduate programs in tertiary care arrange joint salary agreements with appropriate staff in tertiary settings and even take the responsibility of running some of the in-patient units.)

   Those of us with nurse practitioner programs must demonstrate that we have meaningful contact with the practice world, that Schools of Nursing, like Schools of Medicine, are in the business of giving direct patient care and that our faculty are broadly defined as expert clinicians as well as researchers. Schools of Nursing must assume day-to-day responsibility for some types of practice settings and the Federal Legislative and Executive branches can help facilitate this. If we expect our graduates to assume entrepreneurial responsibilities in nurse-run clinics in rural and inner-city medically underserved areas, we must provide role models for them as well as a resource at their alma mater for management problems such as information about codes, licenses, personnel issues, billing systems, insurance, etc.

   Senate Report 102-227, accompanying S.1933, the Health Professions Training and Nurse Education Improvement and Re-authorization Act of 1991 (Section 832) suggests that grants be awarded to Schools of Nursing for the establishment or expansion of clinical training sites or training affiliates that would be administered by the schools. This would occur in medically underserved areas (MUA's) so both inner city and rural would be included.

This policy would be the single most effective effort the Federal Government could undertake to ensure that nurse practitioner students are well trained for the challenges of primary care.

2. Reimbursement

The history of reimbursement for NP's has left them with fragmented and uneven support in terms of public and private sector direct reimbursement. The patchwork approach taken at the Federal level to make reimbursement available to some nurse practitioners at some sites, compounded by disjointed efforts on the State level, has made the void between what NP's are educated to do compared to what they can be financially supported to do increasingly disparate. Interestingly, a central debate within the Physicians Payment Reform Commission and other Federal agencies, is an outdated discussion of whether NP care is additive (extra to the care given by physicians) or substitutive (instead of the care given by physicians) which resulted in the PPRC not recommending reimbursement directly to NP's because their services are embedded in physician CPT codes and the commissioners could find no clear explanation of what NP's actually do, how their care is different from MD's and the long-term outcomes of NP care.

The Physician Payment Review Commission's debate of NP care being additive versus substitutive provides examples of a number of bizarre phenomena encountered by NP's. Medicare reimbursement practices are regarded as precursors for the reimbursement practices of other payors. Yet Federal legislation has required the Health Care Financing Administration (HCFA) to tie Medicare reimbursement to nurse practitioners to site restrictions, rate restrictions, and billing restrictions (where services performed by nurse practitioners are actually billed by the physician). For example, it is unclear why direct Medicare reimbursement is currently allowed for FNP's and PNP's in a rural setting where direct physician supervision is not required, while FNP's and PNP's in an inner-city clinic cannot obtain a Medicare provider number and need continuous on-site physician supervision in order to be reimbursed by Medicare. It is clear that the payment systems have not caught up with the multiple roles of the NP who not only manages the care but coordinates the care, all in the absence of the physician.

Current practice decreases patient access to nurse practitioners and prevents them from practicing to the fullest extent allowed by their State practice acts. It also provides a disincentive to other States to amend nurse practice acts to reflect today's health care market. It discourages nurse practitioners from establishing independent practices and may actually constitute a restraint of trade.

To respond to the call for additional data (although many believe that current data on NP care are sufficient), the NIH National Center for Nursing Research (NCNR) and the DHHS Division of Nursing are collaborating on a study being conducted under contract by the American Association of Colleges of Nursing and the Washington Consulting Group. This study will survey nurses in advanced practice (specifically NP's and CNS's) in order to develop baseline profile data of the number of registered nurses with such certification, and to examine the type, nature, and location of their practices; the populations served; and their personal and professional characteristics that may have relevance to the determination of their practice sites. In addition, the NCNR is reviewing current internal sub-committee recommendations to address quality and cost questions regarding nurse practitioner practice from a research perspective.

A reimbursement solution that could be demonstrated by School of Nursing primary care clinics is prepaid, capitated services. Fee-for-service and direct reimbursement are probably history. However, the Federal Government could enable nurses in advanced practice (NP's, CNS's, CNM's, MHNP's, and CRNA's) to provide primary care in urban and rural medically underserved areas (MUA's) as part of managed care Medicare and Medicaid pre-paid, capitated financed packages that are not "incident to" or mixed in with MD Services. An attempt was made in this area with the HCFA Community Nursing Organization (CNO) Demonstration Site Project in December 1991. The Omnibus Budget Reconciliation Act of 1987 directed the Secretary of Health and Human Services to conduct a three-year demonstration project at four or more sites. This project requested proposals for a contract for the development of a nurse-coordinated service delivery model for ambulatory care (primarily Medicare covered home health services, medical devices and durable medical equipment, and certain ambulatory care), which would operate in a service area designated by the contractor and accepted by the government in coordination with the Medicare program.

The problem with this initiative is that schools of nursing, even those already operating clinics, found it difficult to respond because 1) these schools did not provide all the services required (such as medical devices and durable medical equipment) and 2) they cannot be Medicare-certified providers if they are located in the inner cities and do not have on-site MD coverage at all times that an NP is seeing a patient. A new demonstration initiative is needed for nursing school clinics to provide usual NP medical and mental health services to patients under a prepaid, capitated arrangement.

As a realist, I understand that the present concern over health care costs and the old additive versus substitutive arguments may prevent direct reimbursement from becoming available to NP's. I also understand that it is a costly model of payment that has contributed to the escalation of U.S. health care costs.

As a realist, I understand that HCFA cannot implement delivery system changes, but only payment system changes with Medicare and Medicaid.

As a realist, I understand that Congress and the Administration may not be able to agree on separate billing for NP's/CNS's beyond what already exists because there is fear that, in spite of our best efforts, these services will still become additive. This dilemma will not be solved without a dramatic re-structuring of the health care delivery system where nonphysician providers start with a level playing ground.

Therefore, a better strategy may be to ask HCFA to support some definitive demonstration projects of nurse-managed primary care clinics run by Schools of Nursing with primary care graduate programs in a managed/coordinated care environment on a capitated/pre-paid basis. (I am using those two terms--managed/coordinated care purposely--managed care is frequently managed from the financial perspective only with precious little coordination.) Schools could also explore true partnership models with existing HMO's, which already function under capitation models, and work with those HMO's to develop cooperative practice models, with particular attention paid to home care. This could show, once and for all, that NP's are cost-effective and capable of giving high-quality care as measured and evaluated by patient care outcomes and cost outcomes. These managed/coordinated care demonstration projects would yield valuable data about using this payment mechanism for nurse practitioners to increase access, limit expenses, employ cost-saving incentives, and demonstrate their value to the health care delivery system of the future.

It would also be helpful if HCFA would transfer "incident to" language to nurse practitioner faculty supervising students in those sites so that nursing faculty could receive reimbursement for the care given by their graduate students, as medical school faculty can be reimbursed for care given by their students. Schools of Medicine are paid for physicians in training giving care in the ambulatory setting; the same opportunity should be extended to Schools of Nursing and their graduate students.

3. Prescriptive Privileges

One of the issues that should be addressed is prescriptive privileges. Nurses now have prescriptive privileges in about 38 States. In one group of States, nurses have the authority to prescribe from a formulary or standing protocol, and therefore can function as physician substitutes (even though they still face complex regulations regarding these privileges). In the other group of States, nurses may prescribe only in collaboration with a supervising physician, and are limited to functioning in a complementary (and sometimes additive) role (Hadley, 1989).

While the literature strongly validates the efficiency of NP's as clinical practitioners (Feldman, Ventura, & Crosby, 1987 and Conway-Welch, 1991), studies on NP prescription are limited (Mahoney, 1992, p. 50). Since minimal attention has been focused on the regulatory constraints that affect NP prescription privileges, "policy makers may continue to favor unnecessarily complex supervision, such as the involvement of State boards of medicine and pharmacy" (Mahoney, 1992, p. 50). The Federal Government's role in the education of NP's needs to encourage courses in pharmacotherapeutics (for both medical and mental health problems) to allow them to extend their scope of practice in MUA's where they are desperately needed.

4. Medicare Pass-Through Funds

It is essential to change the incentives in financing graduate nursing education in primary care so that NP students are treated equitably with physician students.

   a. Medicare Graduate Medical/Clinical Education funds should be allocated to encourage the education of practitioners of primary care, including the education of nurse practitioners.

   b. Some incentives should be built into the Federal portion of the Medicaid allotment to the States to remove restrictions from the scope of practice of nurse practitioners.

The Federal Government needs to address the need for Medicare direct graduate nursing education payment. To paraphrase the IOM Report about MD training, it should recognize not only the direct costs of training, but by incorporating financial incentives--focused on areas of greatest need in primary care and greatest shortage of NP's--it could become a tool of nurse manpower policy that has the potential of augmenting the composition of the NP workforce. A portion of the revenue from the Medicare indirect clinical education adjustment should also be focused toward the direct financing of services at community-based ambulatory sites used for training primary care nurses (IOM 1989, pp. 61-63).

Also, HCFA could study how NP's are used and paid in HMO's, e.g., by salary, contract arrangement, etc. This data would document the roles of the NP and the payment sources and could point to future models with more involvement of NP's.

5. Mental Health Care

HCFA could call for similar demonstration projects in School of Nursing-run clinics or School-HMO partnerships for mental health nurse practitioner care under capitated, pre-paid arrangements. Less than three percent of Medicare dollars are spent on mental health with a significant lack of mental health care services to that population (Love et al, 1990). Yet, approximately 12 percent of the elderly population has some diagnosable mental disorder (Reiger, 1988). Our aging population, with its increased chronicity, is going to need cost-effective services from mental health nurse practitioners.

Research

A third component of mission of nursing education programs is the research component.

1. Data Quality and Cost Outcomes

The National Center for Nursing Research can support studies to document the quality and the cost-effectiveness of care given by these providers. This can occur within the context of research studies on nursing interventions, patient conditions, and health care settings where variations exist and where health expenditures may be significantly altered. Nurse researchers need to take advantage of these opportunities.

The Agency for Health Care Policy and Research's (AHCPR) medical outcome effectiveness initiative could be widened to address nursing practice guidelines and outcome effectiveness, particularly in the areas of primary care and home care, since the outcomes of physician orders, for example, are frequently dependent on the patient-nurse interaction. For example, medical effectiveness outcomes initiatives could be expanded to develop nurse practitioner guidelines, capitalizing on established protocols that describe appropriate and effective nursing interventions for selected patient care problems. Since nursing care is so much a part of the quality of health care, a Nursing Effectiveness Outcome Program should be established at ACHPR. To paraphrase ACHPR's medical goal, authorized by the Omnibus Budget Reconciliation Act of 1989, "This nursing program would be to improve the effectiveness and appropriateness of nursing practice by developing and disseminating scientific information regarding the effects of presently used nursing services and procedures on patients' survival, health status, functional capacity and quality of life." These nursing practice guidelines would assist in clinical decision making, reimbursement, and litigation. Much of the infrastructure already exists as NP protocols.

2. Educational Research

The Federal Government could also encourage educational research to develop decision systems in which variables can be manipulated and probabilities projected. Students need the opportunity to see outcomes in a non-risk setting and to analyze the results of clinical decisions without harm to the patient (Pew, 1991). Faculty need to document the cost-effectiveness and outcomes of nurse practitioner programs to continue to compete effectively for Federal support (Geolot, 1990, p. 162).

Summary

We must, within appropriate cost constraints, open the doors to NP's to give the less complex care that is so desperately needed in our health care delivery system. We must find a way in our health care delivery system for the most cost-effective person who is legally qualified to give the care or intervention, to GIVE that care or intervention.

Once the Federal Government has carried out its major role of educating these providers, it also has a responsibility to assist in removing the barriers to practice that prevent them from practicing to their utmost abilities. Educational programs for NP's are striving to meet the demands of today's world of health delivery and to anticipate the health access needs of tomorrow. The demands of these programs on students in terms of content assimilation and subsequent responsibility for practice make it abundantly clear that only the very brightest and mature of individuals need apply and that the cost of providing advanced training will increase in proportion to advanced knowledge and technology.

If mature students are going to leave successful professional lives to re-tool into nursing careers or if younger students are going to select advanced nursing practice as a first career choice, financial support for them in their academic programs before graduation and regulatory support to allow them full scope of practice after graduation is essential. It is frustrating that there is such a contrast between the success of the Federal Government's role in supporting educational opportunities for the nurse practitioner and proposing new and innovative ways of improving their clinical training and its failure in providing for their timely and cost-effective usage and reimbursement after graduation.

In closing, let me also emphasize that the Federal Government is you and me. Health care consumers are engaging the Government's executive and legislative branches to make their needs known. Health care professionals are learning more sophisticated ways of assisting these branches in meeting those needs. Much of primary care nursing education, practice and research is funded by the USPHS HRSA Division of Nursing and NIH National Center for Nursing Research. Both of those groups have very able advisory councils and one of their roles is to assume a proactive role in evaluating and responding to change. At the same time, nurse educators preparing NP's need a coordinated five-year plan on which we all agree that we can take to Congress and to the Administration as our agenda for the future. Until we do that, legislation supporting nursing education for NP's will be piecemeal, fragmented, and restricted to a few traditional areas.

My point is that the role of the Federal Government is what we as citizens make it, and if we don't like the role or results, we have only ourselves to blame and only we can rectify it. Schools of Nursing have a partnership interest in promoting the Federal Government's role in nurse practitioner primary care and so do our patients--especially the very young, the very old, the chronically ill and the indigent.

Quite simply, the Federal Government should promote the use of NP's as substitutes for physicians wherever appropriate and reimburse them appropriately for that substituted care.

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Making Primary Care Physicians Enhancers of Access to Superior Value Health Care

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The Scope of the Health Care Crisis

Health Care Costs

The U.S. Department of Commerce recently estimated that the health care industry in 1992 would consume $817 billion, or 14 percent of the U.S. Gross National (Domestic) Product. This is a full percentage point jump over the percentage already recorded for 1990. Health care expenditures have been rising at a rate of about 11 percent per year. They are expected to rise at 12 to 13 percent per year for the rest of this decade. Based on these projections, they will exceed $1.5 trillion by 1997 and $2 trillion by the year 2000.[1] These figures represent a substantial increase over those estimated by the Bush Administration three years ago, when it was estimated that it would be the year 2000, not 1997, that health care expenditures would first exceed $1.5 trillion.[2] The only other group that came close to this latest Commerce Department estimate concerning the rapidity of the rise of U.S. health care expenditures was the National Leadership Coalition for Health Care Reform, honorarily co-chaired and endorsed by former Presidents Carter and Nixon.[3] The coalition estimated that at growth rates established in the 1980's and sustained in the 1990's, health care expenditures would amount to between $2.1 and $2.6 trillion by the year 2000.[4] Even if the Nation emerges from its currently flat GNP (GDP) growth rate to a respectable three percent per year for the rest of the decade, it is clear that health care will exceed 20 percent of the U.S. GNP (GDP) by the early 21st century.

Health Care Access

Another even more troubling aspect of the report by the U.S. Department of Commerce was that in 1992, the number of uninsured was expected to skyrocket to 40 million Americans.[5] This represents an increase of five million over the 35 million estimated to be uninsured in 1991.[6] Although much of this increase might be attributed to the anticipated loss of employment by many workers being structurally displaced in the current and anticipated reorganization of corporate America, much of the increase may also be attributed to the costs becoming prohibitive to a growing number of companies and individuals.

This figure of 40 million Americans, troubling as it is, is but the tip of the iceberg, considering the number of people who are underinsured. Anyone who could be financially devastated by a catastrophic medical illness affecting either himself or a dependent (especially elderly parents) could fit into this category. With the continuing underwriting practice of not insuring for pre-existing illnesses or conditions and even excluding whole illnesses or classes of people from coverage, it is fairly clear that virtually any American could fit into this category of "underinsured" at any given time.

Health Care Quality

Despite the investment of 14 percent of the Nation's GNP (GDP) in health care, and probably as much as 20 percent or more of it by the year 2000, what is the current evidence that the American people are currently "getting what they're paying for"? The most troubling answer of all is: Nobody really knows! There is tremendous disagreement concerning the value of care provided.

"This inability to measure and understand the effect of patient, payer and provider choices on a patient's well-being has resulted in widespread dissatisfaction with health services and evidence of market failure. Patients commonly judge their medical care on the perceived quality of service (physician manner, waiting time, etc.). Payers are perplexed by repeated demonstrations of wide variations in practice styles among settings with no verifiable difference in health outcomes. Physicians believe financial concerns are jeopardizing patient care. Health care executives lack management tools to account for their services' effects on patient health, with management decisions being made only with knowledge of costs of care. Given this seemingly insurmountable information gap, pressure is building simply to cap expenditures and control volumes without regard for effectiveness or value."[7]

There is also an equally great, if not greater, debate concerning what clinical processes applied to patients with particular conditions and findings are appropriate:

- "A 1985 bibliography listed more than 400 articles that describe the substantial variations among physicians in virtually every aspect of the diagnostic process, from taking a history to doing a physical examination, reading laboratory tests, performing pathologic diagnosis, and recommending a treatment."[8]

- "There is one study involving four cardiologists who were given high quality coronary angiograms of representative patients and asked to estimate whether the percentage of stenosis in the proximal and distal left anterior descending artery was greater or lesser than 50 percent. They disagreed on 60 percent of the patients. If the distinction between proximal and distal stenosis was ignored, and the question is reduced to whether there was 50 percent stenosis in any segment, they still disagreed on 40 percent of patients."[9]

- "Another study evaluated the extent to which observers agreed with themselves on two successive readings of the same angiogram. The observers changed their minds from 8 to 37 percent of the time, depending on the vessel segment."[10]

The variations in practice patterns and disagreements on the value of clinical outcomes, much less the lack of any demonstrable relationship between specific practice patterns for particular clinical conditions and superior value outcomes are but the symptoms of underlying health care system disease. At the heart of that disease is the traditional indemnity method of physician reimbursement. An analysis of this root cause, and its many diverse effects on the cost, access, and quality aspects of health care delivery follows in the next part.

The Root Cause of the Health Care Crisis

Despite the tremendous and growing problem of the uninsured and underinsured, these, as well as cost and quality problems, are but symptoms of an afflicted system. The root cause of these problems may be traced to the traditional indemnity method of financing health care. This system has actually led to overinsurance among recipients of both privately and publicly financed health care services in the following manner.

Providing, in effect, an open checkbook to health care practitioners and facilities over the past 40 or so years (especially since 1965 with the passage of Medicare) has had many implications in the financing, provision, and receipt of health care services. One of the most dramatic effects has been to create the mythology that health care quality will decrease proportionately with prospectively imposed limits on expenditures. This mythology has spilled over to union and consumer organizations. They are convinced that to penetrate the shield protecting them and their providers from the financial consequences of health care spending will have dire consequences for both access and quality.

Traditional indemnity insurance financing has not in any way provided incentives to patients (or potential patients) to adopt healthy lifestyles. Even worse, traditional indemnity insurance has made available strong financial incentives for providers not to be efficient in either their diagnostic or therapeutic decision making. The more physicians (providers) did, the more they made, ultimately: pure and simple as that. That is not to say that health care providers have intentionally ordered more tests, procedures, hospitalizations or consultations than they thought or felt were necessary or appropriate. But they have had no real incentive to find out how to achieve equally good or better results for their patients for less, perhaps substantially less.[11]

Traditional indemnity insurers have merely footed the bill in the past. Until recently, they would pay any price for any procedure or service at any rate of utilization. Of course the buck did not stop there. It got passed on to the employer in the form of health benefits premiums which have been rising at the previously mentioned 20 percent per year rate. The easy way out for companies has been to shift these costs to yet another further down the hierarchy, the employee, in the form of increasingly higher copayment, coinsurance, and deductible requirements. Many companies have gone further and reduced or eliminated benefits altogether.

In the past, traditional indemnity insurers have responded to the protests by employers and employees to these cost shifting exercises in a number of myopic ways. They have limited or eliminated employees' coverage through pre-existing illness exemptions. They have engaged in "skimming" companies to provide full coverage for only the "best risks." They have even eliminated or made it difficult sometimes for whole classes of individuals (including health care workers) to obtain coverage due to their perceived "risky" lifestyles. In addition, they have often rather arbitrarily (or so it might seem) eliminated whole areas of medical treatment from coverage, e.g. autologous bone marrow transplant for advanced breast cancer, positron emission tomography, chiropractic manipulation, lithotripsy, and preventive medical screenings of various types.

These efforts by traditional indemnity insurers to contain costs through elimination of risks (whether by type of patients, class of workers, diseases or treatments) have resulted in severe (often justified) criticism of the health insurance industry. For many Americans, health care and the insurance that subsidizes its cost, rank right up there with freedom of speech, religion, and the press as inalienable rights. These are considered to be societal entitlements accruing to all citizens. Small wonder that the "skimming" practices of private traditional indemnity insurers have been condemned from the village green to the Halls of Congress as unconstitutional or immoral.

Regardless of political considerations and whether or not it is ever determined that health care and the health insurance comprise a constitutional right for all citizens, it is clear that the traditional indemnity health insurance experiment is no longer tenable in the 1990's. Subsequent sections of this article address how health insurers can and must transform themselves in response to the paradigmatic shifts emerging as we approach the new millennium (and how this will impact primary care providers).[12]

The Challenge--Shifting the Paradigm

Top executives from American companies must recognize the overwhelming importance of maintaining and even enhancing their health benefits programs in the coming years. Regardless of the short-term economic burden on them, it also will be imperative for these companies to join with their carriers and other medical quality management consultants to determine how they may assemble health care provider networks of the highest possible value. Achieving this will permit American companies to provide the following to their employees:

- A broad spectrum of primary, secondary, tertiary, and quaternary clinical services of superior value;

- Easy access to their own primary care physicians, who function as medical care value enhancers (as discussed below) by carefully managing the utilization and quality (of services) they receive through health care networks;

- Ongoing demonstration through clinical outcome, patient satisfaction, and various quality of life measures that they are receiving superior value care; and

- The means to continually improve their own health, productivity, quality of life, and medical decision making through extensive employee/patient education materials, interactive videotapes, and corporate health programs (participation in any or all of which could result in broader benefits; the elimination of coinsurance, copayments, and deductible requirements; or both).

How companies, their carriers, and consultants may be able to achieve the preceding objectives necessary to meet their short- and long-term strategic competitive goals through the practice of medical care value purchasing will now be discussed.

Medical Care Value Purchasing[13]

What is Involved

Medical care value purchasing is possible only through the ongoing collection of timely health care data that are analyzed and reported in useful formats. For medical care value purchasing to work effectively, there should be:

- Definitions of provider quality and cost-effectiveness mutually agreed upon by providers and purchasers;

- Systems for measuring provider quality and cost-effectiveness mutually agreed upon by providers and purchasers;

- Standards mutually agreed upon by providers and purchasers for selecting providers on the basis of their measured clinical performance as compared to these standards;

- Criteria mutually agreed upon by providers and purchasers for selecting providers on the basis of their measured clinical performance as compared to these standards;

- The redesign of health care benefit programs to create incentives to channel subscribers toward high-value providers and away from low-value providers; and

- Methods to establish and continually adjust provider reimbursement levels on the basis of the demonstrated value of their health care services to subscribers.[14]

The Pivotal Role of Managed Care Systems (and Primary Care) in Medical Care Value Purchasing

Depending on their method of financing, managed care systems may be HMO's (health maintenance organizations), PPO's (preferred provider organizations), IPA's (independent practice associations), PHPO's (private health plan options), CMP's (competitive medical plans), POS's (point of service plans), or any number of other alphabet soup combinations. The important distinguishing feature about managed care is that it represents a marketing of a network or system of providers as a health plan option to purchasers. It provides to members (patients) health care coverage of a specific scope (and amount) at contractually negotiated rates. As such, managed care systems represent the predominant manner by which health care services will be packaged, marketed, and purchased in the 1990's and beyond.

Despite their forward-looking financing methods, the services of managed care systems, in general, have not been purchased to date on the basis of their value any more than have been the services of hospitals or other health care systems. This situation has continued despite the central position of managed care systems in the medical care value purchasing scheme. (Corporations usually purchase the services of health care plans represented by managed care systems, as opposed to the services of individual hospitals [or physicians] within these systems.)

As providers of health care services, managed care systems will have to be able to document the value of the clinical services their networks of participating hospitals and physicians render to health plan subscribers. To a great extent, corporate and other private and public sector purchasers of health care services will use sophisticated medical care systems to evaluate the managed care systems, much in the way corporate purchasers may use such systems to evaluate hospitals and other institutional providers directly.[15]

To compete effectively as providers in the emerging era of medical care value purchasing, managed care systems must also be able to function effectively as medical care value purchasers. To assemble and maintain a network of hospitals and physicians of the highest value, managed care systems may function as purchasers, using the same sophisticated medical care evaluation systems that corporate purchasers use in evaluating managed care. The following is a non-exhaustive list of the ways managed care systems will have to approach this evaluation.

- Selection of providers and the negotiation of capitation (and other reimbursement) rates based upon their documented severity-adjusted quality (process and outcomes) and cost-effectiveness (value) for the following types of participating providers:

    - Hospitals;

  - Individual primary care physicians;
  - Individual specialty care physicians;
  - Individual primary care physicians designated as case managers (medical care value enhancers);
  - Primary care physicians groups designated as case managers (medical care value enhancers);
  - Specialty care groups;
  - Multi-specialty group practices;
  - Skilled nursing facilities;
  - Rehabilitation facilities;
  - Intermediate care facilities;
  - Home health care agencies; and
  - Entire (vertically and horizontally) integrated health care systems.

- Improvement in the effectiveness of medical care value purchasing by focusing value enhancement efforts on participating providers for which education will yield the greatest improvement.

- Use of one or more of the following utilization management methods to determine the propriety of hospitalization:
  - Pre-admission certification programs to correlate admission severity of illness with satisfaction of pre-admission certification criteria; and
  - Continuing stay certification to correlate (post-treatment) severity of illness with satisfaction of intensity of service criteria.

- The setting and resetting of per diem (or other method) payment rates to providers (hospitals) based upon the relative severity of illness of their patients and their effectiveness in improving patients' clinical outcomes.

- Further refinement of physicians' relative value scales (RBRVS) based upon the value of service rendered not only from the providers' perspective (including such factors as difficulty, time involved, training required, risks, etc.), but also from the viewpoint of the recipient and financier of the care;

- Facilitation in meeting long-term strategic planning and marketing goals through ongoing optimization of provider selection and retention methods; and

- Production of differential financial (and quality) impact analyses of alternative hospital and physician network configurations (financial and quality modeling systems).[16]

Medical Care Value Enhancement

What It Is

The preceding section of this article concerned medical care value purchasing. However, with every buyer, there has to be a seller. In the medical care value purchasing marketplace, the "seller" of services is a "medical care value enhancer."

A medical care value enhancer is one who needs to convince the medical care value purchaser of the superior value that the former is adding to the health care delivery and financing transaction. "Value" in this context may be defined or regarded as the greatest degree of measurable improvement that a provider (individual, group or institution) effects in the health status, well-being, quality of life, satisfaction and/or productivity of an individual or defined population per dollar invested per unit time.

There may be many different indicators by which value and enhanced value may be measured, including (but not limited to):

- Objective measures such as severity-adjusted mortality, morbidity, post-operative complication or infection rates, etc.;

- Subjective measures such as sense of well-being, satisfaction with the care experience in general and specific ways; and

- Objective/subjective measures such as the various parameters, examined by the Short-Form 36 including the following specific health attributes:

  - Overall evaluation of health (general health perception)

  - Functional status

    * Physical functioning;

    * Social functioning;

    * Role limitations due to physical and/or emotional problems

    - Well-being perception
        - Mental health;
        - Energy/fatigue (levels); and
        - Pain
- Productivity-related criteria such as:
    - Absenteeism rates;
    - Work-related injury or illness rate;
    - Days off due to worker injury or illness;
    - Days off due to dependents' illness;
    - Job performance attributable to health status; and
    - Attrition attributable to health status.

The Role of Primary Care Providers

Primary care providers, whether they be physicians, physician extenders, allied health professionals, mid-level practitioners, or any number of other groups, are positioning themselves to be the "primary" medical care value enhancers in the 1990's and 21st century. During the salad days of managed care, they labored under the sobriquet of being "gatekeepers." This appellation and role is no longer appropriate.

Primary care providers, especially in managed care systems, in the future will need to serve as assessors of the value of the care that they provide directly (as measured by the above criteria, among others). To do this, they must be willing to enter into cooperative arrangements with the financiers and recipients of care to discover what criteria of quality are most important to them, and how well they are fulfilling them. They must be willing to subject themselves and their care to this level of scrutiny through information sharing and through agreement on methodologies for measuring and improving the care they provide. They must also be willing to consider adjusting their practice patterns to incorporate those that are demonstrably associated with superior value care delivery.

However, the primary care provider medical care value enhancer must go further than that. In the "coordinated care" setting of the future, it will also be incumbent upon the primary care provider medical care value enhancer to serve also as a medical care value purchaser. In fact, in many ways, it will be equally important for the primary care provider, to know not only how to optimize the value of his or her own direct care delivery, but also how to ensure getting this value from other providers to whom patients are referred or sent for consultation.

In this emerging marketplace, it will be primary care providers who will function as "chief care coordinators." They will be patients' tour guides through the health care delivery maze. It will be their primary responsibility to optimize the overall value of the health care delivery and financing transaction as discussed, previously. They will need to be able to evaluate the quality and cost-effectiveness of all other providers (both individual and institutional) involved in the care of individual patients and populations. As discussed in greater detail below, they will be evaluated, recognized and rewarded based on their ability to do this.

The Education and Training of Medical Care Value Enhancers

Primary care providers will need to receive substantially different postgraduate and continuing medical education to function in their emerging role as medical care value enhancers. Most importantly, they will need to receive considerable education and training not only in their roles as medical care value providers and enhancers, but also in clinical decision analysis.

Clinical epidemiology, including decision analysis, has gotten short shift in virtually every medical curriculum (undergraduate, graduate or continuing). Nevertheless, it is the basic science for practicing medicine in the future. The ability to combine clinical decision analysis with cost-effectiveness and benefit cost analyses will be just as essential to the primary care clinician of the future as has been (and will continue to be) combining pathophysiology with clinical diagnostics and therapeutics.

As part of their training in clinical decision making to become medical care value enhancers, primary care physicians must become familiar with such concepts and applications as:

- Clinical test sensitivity;
- Clinical test specificity;
- Clinical test positive predictive value;
- Clinical test negative predictive value;
- Diagnostic performance of clinical tests;
- Clinical utility;
- True positive rate;

- True negative rate;
- False positive rate;
- False negative rate;
- Pre-test probability of disease;
- Post-test probability of disease;
- Positivity cut-off levels;
- Test threshold;
- Test treatment threshold;
- Expected value of clinical information;
- Net present value (NPV);
- Discount rate;
- Cost-effectiveness analysis;
- Benefit cost ratio; and
- Discounted cost and value.

Reward and Recognition for Medical Care Value Enhancement

Consistent with the theory and practice of medical care value purchasing, medical care value enhancers will be given incentives, recognition, and rewards for their individual and collective ability to add value to the delivery and financing of health care for individuals and populations as discussed in this paper. Adding value through meeting and exceeding expectations as defined by these quality indicators, as well as reducing waste, rework and the cost of complications will be promoted through appropriate recognition and reward systems. This practice is completely consistent with the overall approach, principles, and practice of total quality management, as espoused by the Malcolm Baldrige National Quality Award.

Incentives, rewards, and recognition may vary, but would certainly include (but not be limited to) the following for superior medical care value enhancers:

- More patients;

- More dollars (by whatever financing method) per patient;

- Fewer hassles concerning their diagnosis, treatment, and reimbursement for patient care;

- Lower medical liability premiums (to the extent that enhanced value could be correlated with fewer litigable events through independent risk management agencies);

- Superior achievement awards (of a financial and/or professional nature);

- Recognition for adoption of clinical practice patterns in graduate and continuing medical education programs; and

- If desired, increasing medical management responsibilities and authority in managed care systems devoted to medical care value purchasing and enhancement.

Conclusions

Simmering for at least the past two decades, the American health care system is boiling over as a high priority domestic policy concern in the 1990's. The important issues of improving cost and quality management and access to health care can no longer be denied. To do so has not only serious moral implications for society, but competitive, economic, and productivity implications for corporate America.

Medical care value purchasing may be a way of rationalizing the delivery and financing of health care by committing all the major stakeholders to an ongoing partnership to agree on the best ways by which value may be optimized in the health care system.

Primary care providers, who have already played an integral role in the use of managed care systems during the 1970's and 1980's, should assume an even more valuable role in the 1990's. They will be responsible, not only for optimizing the quality and cost-effectiveness of their own direct care delivery, but also for optimizing the value of the total care patients receive by coordinating their medical journey in the most appropriate, effective, and efficient manner through the maze of specialists, institutions and medical technology.

For primary care providers to fulfill this new role, they will need not only substantial new investments in education and training (especially in clinical decision analysis), but also new recognition and reward incentives to promote their success as medical care value purchasers and enhancers. Public and private financers and academic centers should enter into cooperative partnerships to foster these education, training, reward, and recognition programs. To do less will be to abandon the last best hope for rationalizing what still could be the best health care system in the world.

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Meeting the Special Health Care Needs of Lower-Income Hispanic Communities: Best Practices

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For primary care specialists, the decision to focus on the needs of underserved groups has been a major challenge due to the fact that the delivery of health services has been based on conceptual frameworks developed for the general population. When it comes to providing services, practitioners and planners depend on models that have been successful in non-Hispanic white communities. The result is that well-intentioned providers have often been frustrated with the models' lack of success when dealing with diverse communities.

As the need for new models to address the health care problems of the Hispanic community grows, it becomes more and more crucial to look carefully at Hispanic communities and to analyze the available data. This is a difficult task when working with Hispanics because relatively little information about them is available. Consequently, many of the programs that have been developed for Hispanics are based on fragmented data or data made to fit a minority model of health. For example, the 1985 Secretary's Task Force Report on Black and Minority Health had a series of tables on mortality rates for Blacks, Asian/Pacific Islanders, and Native Americans. Although comparable data were not available for Hispanics the authors of the report felt compelled to produce a similar table for Hispanics. Searching through available databases the only mortality data the task force found were figures from limited studies of foreign born Hispanics. Nevertheless, a table on mortality rates for Hispanics was included in the report.

There were two problems with the data summarized in the tables. First, the Hispanic data were not accurately generalizable to all Hispanics since less than one-third of all Hispanics are foreign born. Second, the use of data from foreign born persons made certain categories meaningless (e.g., infant mortality).

Increasingly, primary care institutions are faced with a growing population of Hispanics and must decipher the very limited and disparate data that are available. A careful assessment of the conceptual framework currently used to develop health care services for Hispanics suggests that the services are structured on the following types of statements:

1. There exists a minority or poverty model by which the delivery of health services to Hispanic communities can be designed and understood.

2. Hispanics are a new immigrant population.

3. Hispanics prefer folk medicine and won't seek "mainstream" health services.

4. Among Hispanics, the uneducated, Spanish, monolingual and recent immigrants have the worst health status and outcomes.

5. Hispanics suffer from excess mortality.

The problem is that these frequently made statements are not supported by data or facts. What follows is a discussion of each of these statements and the actual data, which provide an accurate description of the state of Hispanic health.

Statement 1: There exists a minority or poverty model by which the delivery of health services to Hispanic communities can be designed and understood.

Fact: Each race and ethnic community has a set of unique characteristics that distinguishes its health status. For example, infant mortality is a severe problem for the black community, but the same does not hold true for Hispanics (Table 1).

This is particularly perplexing for health researchers whose paradigms cannot explain the positive outcomes for Hispanics. As a result Hispanics are often referred to as a paradox even though there are a large number of Hispanics (25 million) and consistent findings. In the absence of adequate outcomes research, it is not possible to account for the fact that Hispanics (by subgroup and across the board) are poor (Table 2), are the least likely to have a regular source of health care (Table 3), have the latest and fewest visits for prenatal care (Table 4), but are not having the expected level of low weight births (Table 5) nor infant mortality. In fact, the birth outcome data for Mexican American and Cuban American mothers are similar to those for non-Hispanic white mothers.

Statement 2: Hispanics are a new immigrant population.

Fact: Hispanics are much more a community of long-term residents than recent immigrants--in fact, 71 percent of the Hispanic population is native-born.[1] Moreover, with regard to the Hispanic populations in the west, southwest, and Puerto Rico, it is historically more accurate to say that the U.S. border crossed the communities.

Statement 3: Hispanics prefer folk medicine and won't seek "mainstream" health services.

Fact: According to analyses of the Hispanic Health and Nutrition Examination Survey (HHANES), only 4.2 percent of Mexican Americans (18-74 years of age) reported consulting a folk medicine practitioner in the year prior to the survey.[2]

Statement 4: Among Hispanics, the uneducated, Spanish, monolingual and recent immigrants have the worst health status and outcomes.

Fact: The risk of low birth weight for Mexican Americans is 1.73 times higher in the second generation compared to the first.[3] Analysis of HHANES also showed that increased English language use by Hispanic youth, was associated with higher rates of illicit drug use even after sociodemographic variables such as gender, age, income, and education were considered.[4]

Statement 5: Hispanics suffer from excess mortality.

Fact: Death rates are lower for Hispanics than for non-Hispanics between the ages of 45-64 (Table 6) and the ages of 25-44 (Table 7). Given the impact of chronic disease such as diabetes (Table 8) in Hispanic communities, there is a need to focus on morbidity data. Hispanics live a long time but given the types of health problems that are most common in this community, it is unlikely that they are living healthy lives.

With these facts in hand it becomes important to understand the variables that have helped create the peculiar health behaviors of Hispanics. Culture and language are two factors that require much consideration.

Culture

To understand how pervasive the influence of culture is in health care, imagine yourself in need of health care in a part of the world where you don't understand the language spoken and very few of the locals understand the language you speak. The values and beliefs of the local population are much different from your own and your physical characteristics cause you to stand out from the crowd. The locals regard your presence as a burdensome annoyance and some openly demand that you go back to where you came from. Even though you are a major contributor to the growth of the local economy, they consider you a drain on their system. Worse yet, all the services you have come to depend on such as the government, the educational system, and health care are based on the values and beliefs of the locals and seem hopelessly bureaucratic to you.

When you enter a healthcare center the person at the desk starts talking to you in a very loud voice because they think that you will understand them better. They then give you many forms to fill out in a language that you do not read. As the time passes they give you more papers to sign. Your family is told to stay behind while they take you into a room where you wait for more than an hour. Your name is called and you are brought into a large room and told to take off your clothes and put on a paper gown. You spend six minutes with one person and seven minutes with someone you assume to be the health care provider. You leave with pieces of paper in your hand and several bottles of pills. As you walk away you decide that perhaps it is better if you just take care of your self and avoid having to go back to this place unless you are very ill.

Welcome to the culture of the U.S. health care system as viewed by many Hispanics. Too often, in an attempt to be rigorous and impartial providers do not take culture into account. The impact of culture, however, should be seriously considered along with biological indicators when providing health care. This requires primary health care providers to revisit the concepts of culture.

The concept of "culture" developed from the work of Max Weber and Emile Durkheim, who in the early 1900's began to look to non-Western European societies to see how those societies understood themselves. Weber and Durkheim recognized that other people do not necessarily view the relationship of the individual to society in the same way as either Western Europeans or their cultural progeny (e.g., the majority of the United States) do. The specific components of culture are difficult to articulate because they are made up of language, experiences, and knowledge--intangibles that do not lend themselves to any sort of easy delineation. Language is also another important component. Some of the major underpinnings are sometimes encapsulated as "values." Thus, experience and knowledge regarding family form a particular family value, which varies from culture to culture.

Culture functions as a framework within which one operates throughout their daily lives, and which serves as a means of defining the relationship of the individual to the environment and to other individuals. Thus, culture has been variously described as the "seamless web" of understanding, which colors the way one sees the world, or as a set of values that helps determine responses to a variety of stimuli.

For example, if one's cultural framework contains a value--a set of experiences and knowledge--that places a premium on physical nearness of extended family, a married individual with children is more likely to choose to live under crowded conditions so that a parent could live with them rather than having the parent far away. The value of nearness to family in one culture takes precedence over the value for privacy which may be more important in another culture. Thus people sharing the same culture may have a tendency to live under more crowded conditions and this will become associated with the group as a cultural trait. It is in this same fashion that culture, operating as a framework with values, helps to determine what foods to eat, what clothes to wear, how to behave toward certain people, and even where to go when ill.

Of course, cultures themselves are remarkably varied. For example, mainstream Anglo-American culture strongly values the nuclear (not extended) family, the individual, and traditionally relies on the written word for transmitting information. Hispanic cultures strongly value the extended family and the community, rely on the spoken word for transmitting information, and put significant emphasis on religion in everyday life.

Key Aspects of Hispanic- and Anglo-American Cultures

In many non-Western cultures the conception of what constitutes "family" is more all-encompassing, with the distinction between immediate and extended family virtually non-existent. The words "immediate family" or "family" elicit images not only of spouse and child, but also parents, in-laws, siblings, aunts, uncles, and even non-blood kin. It is not uncommon for many of these relatives to share a common home. Further, these societies generally subordinate the needs of individuals to the needs of the family. Indeed, the concept of a fulfilling life may not have any meaning for the individual outside of the context of family. As a result, many people from non-Western cultures put the maintenance of the family and their role in it above their own needs as individuals.

Among Hispanics this is a prevalent theme. In Hispanic culture the family is conceived of as more than the immediate family. Rather, it is primarily thought of as "...an emotional support system, composed of a cohesive group of lineal and collateral relatives, where members can find help on a regular basis and rely on relatives more than on external sources of support."[5] So important is this concept of familialism that even among highly acculturated Hispanics--those whose cultural frameworks contain a large number of American values--the emphasis on family persists.

This compares to the Anglo-American conception of family, in which the distinction between immediate and extended family is more sharply drawn. "Family" is commonly thought of to mean the nuclear family--spouse and children--and not taken to automatically include a large number of extended family relatives. In addition, individualism is of overriding importance among Americans, and does not easily allow subordination of individual interests to those of the family as a whole, as is common among Hispanics.

Hispanic conceptions of family also extend to how Hispanics view their communities and their role in them. Among Hispanics the surrounding community is viewed in largely the same terms, functionally, that mainstream Anglo-Americans view their extended families. That is, the members of the surrounding community are relied on and interacted with in much the same way as Anglo-Americans rely on and interact with their extended families. This compares to an Anglo-American conception that views the surrounding community principally as a loose social network, and not as a primary source of reciprocal support, advice, and assistance. Among Anglo-Americans, the surrounding community is used as a support network infrequently, or only in emergencies. Thus, Hispanic communities tend to be much more tightly knit.

Pre-Emptive Cultural Factors

These values of family and community, while laudable, are also the primary source of barriers to Hispanics accessing care. First, the nature of the cultural values of family and community function to pre-empt Hispanics from seeking professional care from the institutions that have not served them. Thus, rather than turning to public hospitals or health agencies, Hispanics are more likely to turn for advice to those sources that are receptive. Indeed, a study on Puerto Ricans revealed that "...in seeking help, the Puerto Rican will approach family members, friends, neighbors, shopkeepers, *compadres*, or acquaintances who have some degree of expertise of authority in the area of concern...".[6] This is also true for Mexican-Americans, Cuban-Americans, Central and South Americans, and other Hispanics.

The overriding importance of family also causes Hispanics to subordinate their own individual needs, including health needs, to the general good of the family--resources spent on preventive care or going to see a professional once a problem arises are critical resources directed away from working for the common good of the family. Thus the strong family value also creates a predisposition to engage in other activities when they are for the exclusive benefit of the individual or interfere with the family responsibilities of the individual.

The value Hispanic culture places on religion also creates a particularly strong pre-emptive force. Most Hispanics are Roman Catholics and many believe that spiritual elements have a strong effect on their everyday lives. Prayer, for example, is thought to have a profound impact on health. Such beliefs often exhibit themselves as a strong sense of fatalism. Common expressions among Hispanics typify this fatalism: *...que se lo que Dios quiera,* meaning *...it's in God's hands,* or *...esta enfermedad es una prueba de Dios,* meaning *...this illness is a test of God.* With their ultimate fate in God's hands, Hispanics often see little utility in subjecting themselves to a large, culturally alien institution to seek professional advice and direction regarding their health.

By virtue of culture and experience Hispanics may be less likely to seek professional care. The barriers themselves arise from the natural operation of these values and are thus functional barriers--they result from Hispanics acting pursuant to their values in a way that often pre-empts them from even making contact with American health care institutions. They are to be distinguished, however, from interactive cultural barriers, which equally block Hispanic access to care.

Interactive Cultural Barriers

Interactive cultural barriers are those that arise from an active conflict between the values of two disparate cultures. Just as the values of Hispanic culture are expressed through institutions (such as strong community-based organizations) and people in the Hispanic community, so too the values of Anglo-American culture are expressed through its institutions and people. Unfortunately, in the context of health care, there are often significant conflicts of cultural values when Hispanics seek care from health care institutions created to serve the majority culture.

Again, it is useful to examine this conflict in the context of two values critical to all Hispanic subgroups--family and community. Because Hispanics traditionally turn to family and community for help and advice, including for advice on health issues, Hispanics are accustomed to dealing with health problems by utilizing personal relationships established and developed over time. Those that Hispanics deal with know of them, their life situations, their problems, and because of this knowledge are perceived by the seeker of care to have a genuine interest in the total person. This element of *personalismo* is important to Hispanic patients, even if only as a matter of politeness, but is incongruent with the relationships fostered by American health care institutions. Rather, such institutions tend to be comparatively distant and impersonal. For example, clients are generally faced with large institutions like hospitals that require one to immediately recount one's problem's and personal history to a receptionist, an intake worker, or other health worker more interested in administratively processing the case than in the people needing care.

The lack of *personalismo* permeates the entire process, from intake to service delivery to discharge and is frequently cited by Hispanic patients as a major source of dissatisfaction. The values of Hispanic clients create in them expectations about how health care should be delivered, and in seeking care from the typical American institution, their values and expectations conflict with countervailing Anglo-American values that place less emphasis on family and community and relatively more on individualism and efficiency. The emphasis on individualism does not create a mind-set that will naturally consider the patient in the context of family and community, and the high premium placed on efficiency creates an environment in which the patient is treated as something to be processed, and not as a person, much less with *personalismo*.

This interaction between disparate cultural values and their disconcordant expectations creates a negative experience for both the client and provider. For the client the negative experience serves as the barrier that will prevent them from returning when treatment is needed or preventive care ought to be obtained. Further, it can frequently serve as a barrier to effective treatment if the treatment will interfere with the duties of the client to their family. Since the typical provider, both Hispanic and non-Hispanic, is trained by institutions reflecting Anglo-American culture, it usually will not even occur to the provider to consider a prescribed treatment vis-a-vis the patient's role in their family. Yet this is in direct contradiction to the recommendations of experts in the field of health service delivery to Hispanics, who specifically advocate inquiry about the family and the patient's duties, and even strongly recommend incorporating other family members into an overall treatment program for the family.[7]

The provider, however, also comes away with negative experiences arising from the interaction of disparate value systems. Since the operation of the cultural conflict is such that the first encounter is unlikely to be followed up with another visit, and since treatment will often be ineffective for the reasons outlined above, the provider must deal with clients who have consistently poor health outcomes despite their efforts. The provider, faced with the seeming obliviousness of Hispanic clients regarding their own health, is often motivated to approach each Hispanic client with more detachment, often times even more so than is customary for Anglo-American culture. Of course, this in turn reinforces the negative experiences of the client.

Language

Numerous studies have found language to be one of the principle barriers for Hispanics who need access to health care.[8] For Hispanics the family and the community are often the first source of advice and support utilized in dealing with outside society. Expressing feelings and concerns about health to friends and family is part of an intimate relationship and, as a result, a certain amount of empathy as well as advice is expected in a friend's or relative's response. In this traditionally spoken mode of medical care, a tremendous amount of importance is placed on *how* one expresses advice as well as the specific content of that advice. Obviously, speaking the same language as the individual becomes critical. Given the importance of interpersonal relationships it becomes essential to have a match between the language of the individual and the various persons who will interact with them in a health care institution.

Spanish is the language of the majority of the Hispanic community and research indicates that the quality of care afforded to Spanish-speaking patients is improved by having a language concordant physician. Analysis of asthma patients of a faculty group practice of the Presbyterian hospital in New York City found that patients, with extended follow-up, cared for by a language discordant physician were more likely to omit medication, more likely to miss office appointments, and were slightly more likely to make an emergency room visit than patients with concordant physicians.[9] Additionally, "...two out of three [Hispanics] prefer to use a doctor who is fluent in Spanish. There is a strong preference that information programs be given in Spanish."[10] Hispanics may be uncomfortable in discussing their health concerns in English if they do not feel they have mastered enough English to express their feelings about their illness appropriately.

Despite the clear need for more Spanish-speaking and Hispanic physicians, there is a shortage of linguistically and culturally concordant physicians for the Hispanic community. Hispanics currently represent 8.4 percent of the total U.S. population but are only four percent of the U.S. physician workforce.[11] In 1985, it was reported that only 37 percent of Hispanics go to a Hispanic doctor and 45 percent go most often to a doctor who is not Hispanic while 18 percent do not have a regular doctor at all.[12] Furthermore, although the enrollment of Hispanics in medical school has increased by 35.4 percent since 1980, the Hispanic population has also grown 38.9 percent since that time, which means there has been no real gain in the representation of Hispanics in medical school.[13]

Experts in the field of health service delivery to Hispanics advocate inquiry about the family and the patient's duties, and even strongly recommend incorporating other family members into an overall treatment program for the family.[14] Health care providers should avoid dispensing advice in a dry, curt manner to Hispanics because they may be misinterpreted as not caring about them. Indeed, a number of studies have reported that many Hispanic patients do not feel comfortable discussing physical and emotional problems with strangers, and that they do not feel that health professionals really care about their well-being.[15]

The physician must also be aware of the cultural patterns of emotional expression for the specific community he is working in: "cultural differences associated with language, modes of expressing symptoms, meanings associated with experiences such as altered states of consciousness, typical idioms of distress, sociolinguistic patterns, and differences in explanatory models and value systems are often reported to lead to unintended but systematic bias in assessment and diagnosis of persons from very different life worlds of the clinician."[16] A thorough understanding of cultural emotional expression is critical particularly in the field of mental health, where minority patients have often been misdiagnosed with regard to depression and schizophrenia.[17]

Implementing Appropriate Delivery Systems for Hispanics

The most important strategy providers can employ to better deliver health care services to Hispanics is to have an organizational commitment to this mission rather than treating it as a peripheral activity. This is best implemented by having bilingual and bicultural persons as policy makers on the board, as senior managers, and as staff responsible for all levels of service provision. Additionally, non-Hispanic staff need to be provided with training on how to serve the target community.

Overcoming barriers to access for Hispanics means more than just providing health care. It means establishing trust and confidence between the Hispanic community and the health care system. Physician-patient relationships are based on trust, and it can only be formed through reciprocal understanding and acceptance of value systems. Health care providers should seek to understand the role of the Hispanic as an individual, as part of a family, and as a member of a community and make an effort to bring *personalismo* to the patient-provider relationship.

It is well-documented that many Hispanics have a high-level of distrust of the health care system and often feel that it discriminates against them: "27 percent feel they face discrimination in the quality of health care to which they have access; 30 percent feel they are not treated with respect at clinics; 28 percent believe that they do not have the same opportunities as others in obtaining health care information. Overall 22 percent feel they run into discrimination when seeking health care. Among Puerto Ricans, the figure is 38 percent."[18] Ruiz and others have documented many examples of how the lack of cultural sensitivity leads to miscommunication between patient and health care provider and frequently to misdiagnosis of the patient's illnesses.[19]

To counteract these negative experiences, health care providers need to be aware of and sensitive to the needs and concerns of their Hispanic patients. If physicians cannot accept the patients' belief system, they should at least listen and respect it, since "...a thorough knowledge of these cultural factors will certainly offer physicians a unique understanding of the patient's conceptualization of his illness, and thus will give him a better chance of insuring treatment, compliance and cure."[20] While cultural explanations of illnesses may involve non-scientific superstitions, Ruiz has noted that "...when physicians, based on their Western medical training, try to convince their Puerto Rican patients that their conception of the etiology of their illness has no sound scientific basis, these patients quickly become noncompliant with the medical regimens prescribed for them and seek help elsewhere."[21]

It has been found that using folk-labeled conditions can be useful in identifying children with at-risk health conditions. Trotter found that most children who had the folk-labeled condition *Caida de Mollera* were probably suffering from severe dehydration.[22] Acknowledging and working with local disease terminology increases patient-health care provider trust. As Ruiz notes, "undoubtedly, understanding these culturally bound diseases is of great importance to physicians who expect to gain the trust and confidence of patients from this Hispanic ethnic subgroup."[23]

Finally, primary health care institutions should invest a good deal of time and resources into an assessment of the particular Hispanic community that they service. This is because Hispanic communities are diverse and respond quite differently to health care services. Thus, in order to deliver services effectively in a given Hispanic community, primary care providers must have a thorough understanding of the particular linguistic, cultural, and institutional infrastructures of the target community.

Designing Strong Prevention Components

Primary health institutions have increasingly recognized the value of disease prevention and health promotion. Providers are not expected to encourage and assist patients in changing risk-associated behavior. Designing strong prevention components for the Hispanic community is particularly important because Hispanics have not been targeted by mainstream prevention initiatives yet are the least insured of any major ethnic group.

In designing a prevention component to target the Hispanic community, primary care institutions must again consider the implications of the unique aspects of Hispanic language, culture, and community institutions. While the actual intervention may be similar across communities it is always critical to understand the context in which the intervention takes place. Thus, the National Coalition of Hispanic Health and Human Services Organizations (COSSMHO) has found it essential to create and fund community advisory boards to develop and implement programs. These advisory boards typically include a cross section of the community including leadership, service providers, consumers, parents, and youth.

Outreach is also a critical part of prevention efforts. To be successful primary care institutions must work with existing leadership in the communities and utilize spokespersons in the prevention effort who are viewed as credible by the community. Often the most credible spokespersons are found locally. Key local intermediaries may include members of social service agencies, youth peers, elected and appointed officials, and the leadership of community organizations.

Identifying key local spokespersons, however, can be a difficult process. It is important that questions about credible spokespersons be asked in the assessment phase of any intervention design. In this manner, consensus is more likely to be reached on credible spokespersons, and there is less risk of choosing a spokesperson who may be seen as credible by only one segment of the community. The community advisory board may also be used as part of this process with the added advantage of increasing community input into the initiative development.

Use of Hispanic celebrity spokespersons has also been effectively used in some targeted health education campaigns. In particular, Hispanic celebrities were effectively used in the ¡Piensalo! Stay Smart! Don't Start! substance abuse prevention campaign for Hispanic youth. In part, the positive response to the use of Hispanic celebrities in this campaign, particularly in poster materials, may be linked to the relative absence of Hispanics in promotional efforts. However, careful distinction needs to be made between materials that need a celebrity to call attention to the issue and those education materials that need an authoritative and credible figure to convey information, or peers to serve as believable role models. Research in San Francisco on AIDS information sources preferred by Hispanics points to physicians, clinical workers, and persons with AIDS as appropriate, credible, or desirable spokespersons.[24] On the other hand, an assessment for a project to deliver inhalant abuse prevention information to Hispanic youth in the Southwest suggested a peer education model as the most effective health education model. Once again, a community assessment and input is central to determining the appropriate source of information to be used.

Restructuring Relationships With Community-Based Organizations

When working with black communities, providers have found it useful to rely on the system of historically black colleges and universities, black medical schools, black churches, and fraternities and sororities to develop the health care infrastructure of the black community. With HIV in the gay, non-Hispanic white community, the major infrastructures were gay organizations and loosely connected networks of gay men's health clinics, which were created in the seventies to meet the health needs of the gay community. When planners tried to look for similar structures in the Hispanic community they found that either these types of institutions did not exist (in the early

1980's there were no major national Hispanic gay organizations) or did not consider direct intervention to be part of their primary mission (Catholic church). These planners falsely concluded that Hispanic communities do not have easily accessible infrastructures to support health programs. This conclusion is based on the idea that there is some type of minority model for health care delivery. No such model exists and each community must be viewed as a unique entity; that is the challenge of accepting diversity.

The most important organizational infrastructure in Hispanic communities is the network of several 100 health and human service community-based organizations (CBO's). These organizations operate in virtually every Hispanic population center and are one of the most credible resources available to health care providers. For the large part, these CBO's were established in response to community frustration with being denied access to mainstream health providers or resources.

The history of many of these organizations is one of a local civil rights struggle. Born out of community organization and agitation, they remain governed by community boards and have established histories of providing linguistically and culturally credible services in their communities. It is this infrastructure that is the most appropriate to utilize when designing and implementing effective health services in Hispanic communities.[25]

Conclusion

To effectively meet the needs of Hispanic communities programs must be targeted to Hispanics based on knowledge, focus on actual data (morbidity rather than mortality), understand the impact of culture and language, develop strong outreach components of prevention activities, and work in partnership (sharing funds and resources) with community-based organizations. Each of these efforts is related to the others and all are necessary to improve the delivery of primary health care to Hispanics.

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16. Good, 1986.

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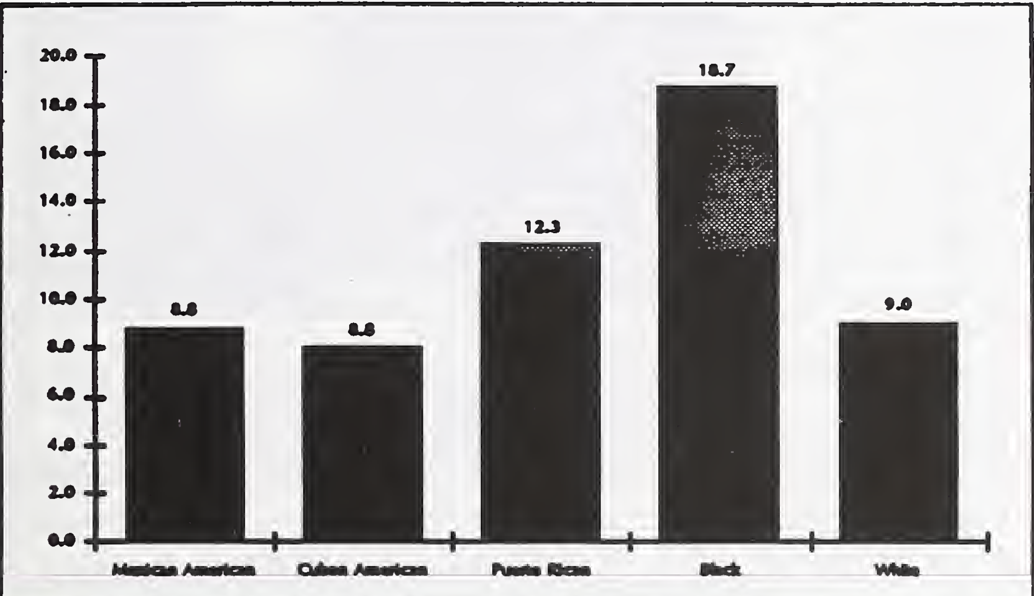
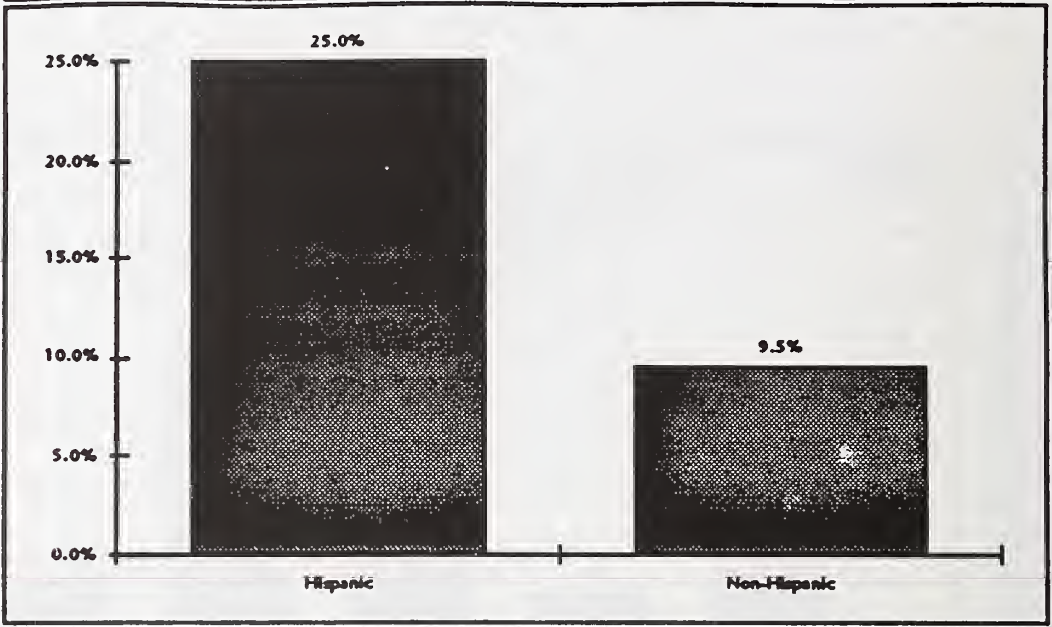
TABLE 1: Infant Mortality Rates, U.S.
1983-85 Birth Cohorts



National Coalition of Hispanic Health and Human Services Organizations (COSSMHO), 1991.
Note: Death Rates per 1,000 live births: Data for 1983-85 birth cohorts.
Source: National Center for Health Statistics. Health. United States. 1990. March 1991.

TABLE 2:

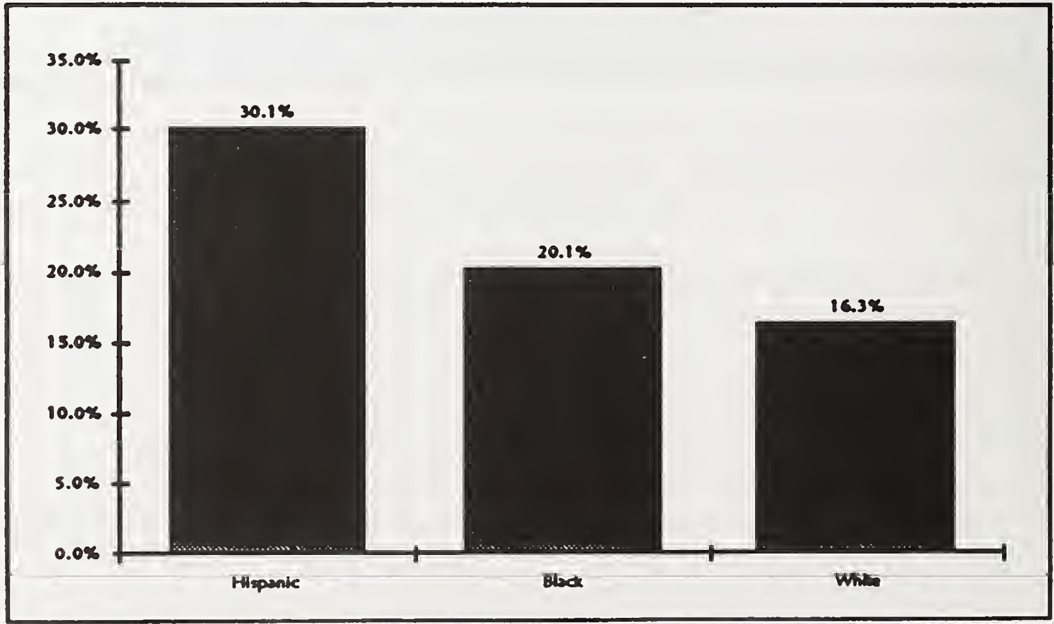
Percent of Families Living in Poverty: 1990



National Coalition of Hispanic Health and Human Services Organizations (COSSMHO), 1991.
Source: U.S. Bureau of the Census, "The Hispanic Population in the U.S.: March 1991."
Current Population Reports, Series P-20, No. 455, October 1991.

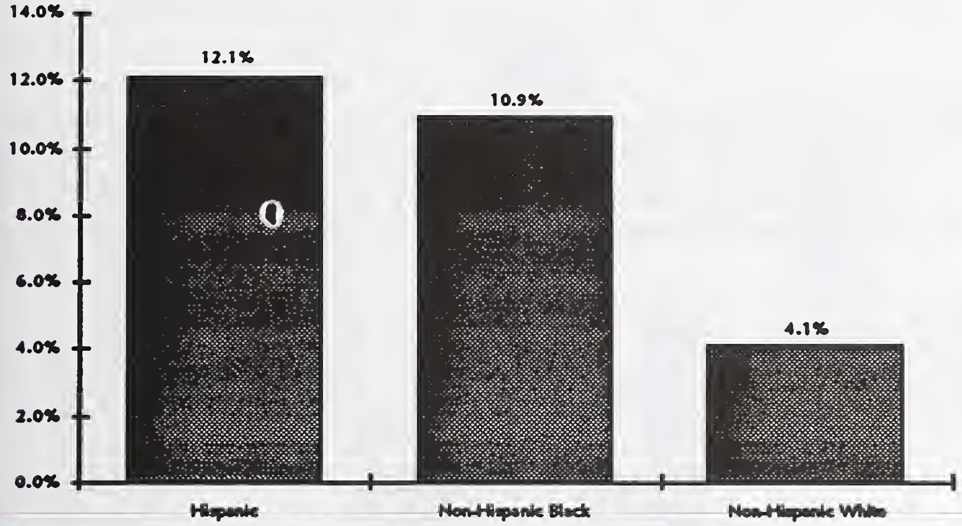
TABLE 3:

Percent of Population without Access to Regular Sources of Health Care



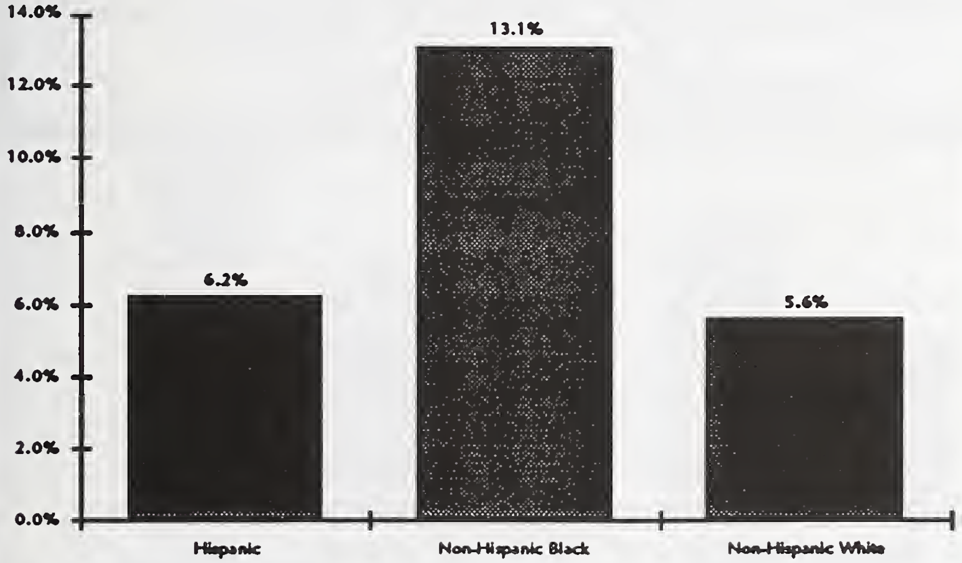
National Coalition of Hispanic Health and Human Services Organizations (COSSMHO), 1991.
Source: The Robert Wood Johnson Foundation, *Access to Health Care in the United States: Results of a 1986 Survey*, Special Report No. 2, 1987.

TABLE 4: Percent of Mothers Who Had Late or No Prenatal Care



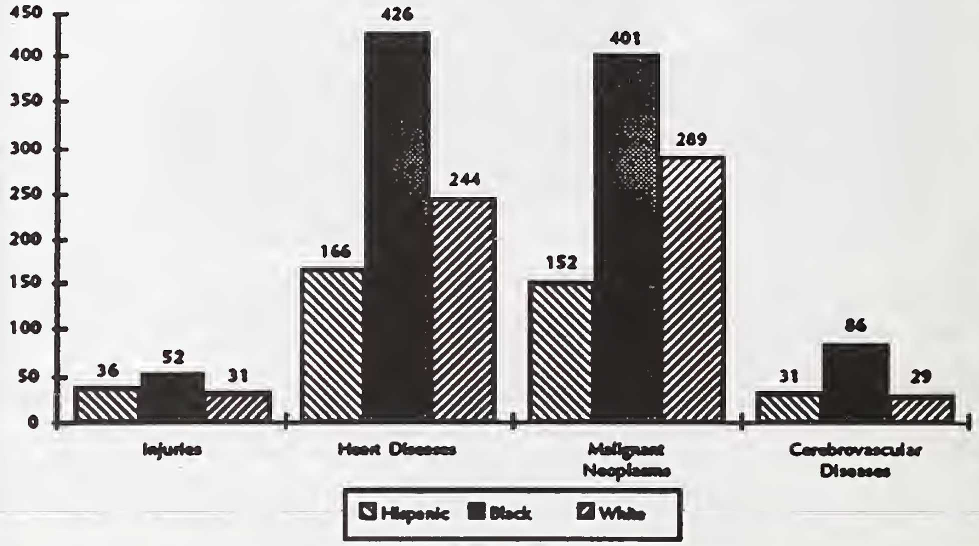
National Coalition of Hispanic Health and Human Services Organizations (COSSMHO), 1991.
Note: Data for total of 30 Reporting States and the District of Columbia.
Source: National Center for Health Statistics, "Advance Report for Final Natality Statistics, 1988," Monthly Vital Statistics Report, 39(4), Supplement, August 1990.

TABLE 5: Low Birth Weight



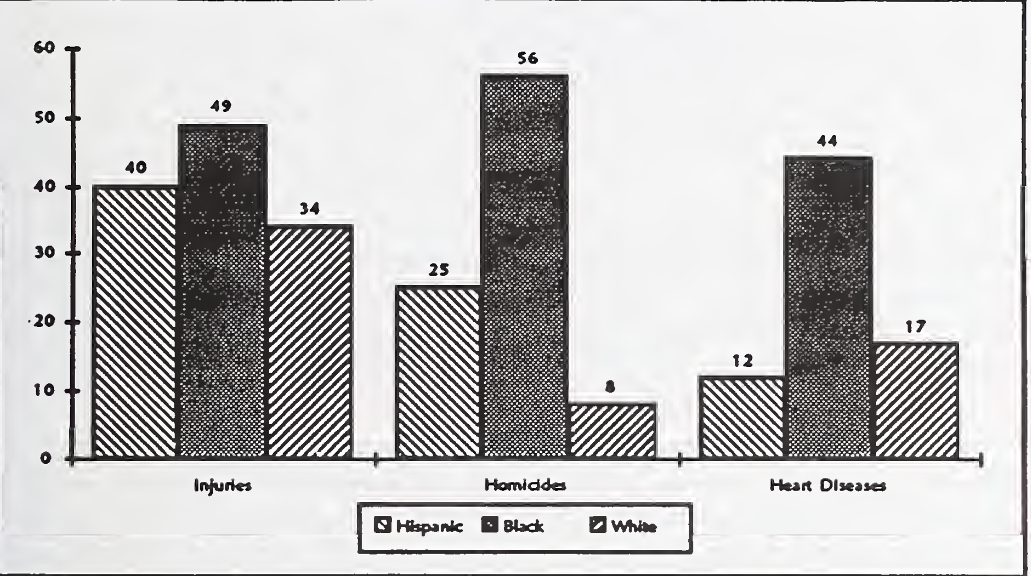
National Coalition of Hispanic Health and Human Services Organizations (COSSMHO), 1991.
Note: Data for total of 30 Reporting States and the District of Columbia.
Source: National Center for Health Statistics, "Advance Report for Final Natality Statistics, 1988," Monthly Vital Statistics Report, 39(4), Supplement, August 1990.

TABLE 6: Death Rates for Selected Causes for Persons 45-64 Years of Age



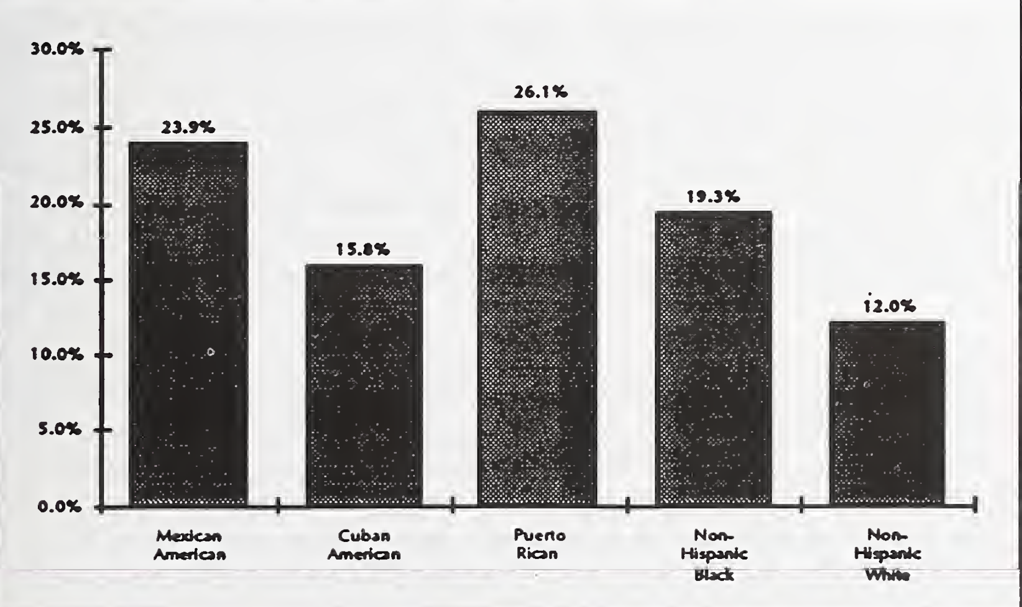
National Coalition of Hispanic Health and Human Services Organizations (COSSMHO), 1991.
Note: Deaths per 100,000 population.
Data on Hispanic origin are from 26 states and the District of Columbia.
Source: National Center for Health Statistics. Health. United States. 1990.

TABLE 7: Death Rates for Selected Causes for Persons 25-44 Years of Age



National Coalition of Hispanic Health and Human Services Organizations (COSSMHO), 1991.
Note: Deaths per 100,000 population.
Data on Hispanic origin are from 26 states and the District of Columbia.
Source: National Center for Health Statistics. Health. United States. 1990.

TABLE 8: Prevalence of Diabetes Among Persons 45-75 Years of Age



National Coalition of Hispanic Health and Human Services Organizations (COSSMHO), 1991.
Note: Data for U.S. 1976-80 and 1982-84.
Source: National Center for Health Statistics. Health, United States, 1990.

The Catalyst of Technology
How Will Advances in Information Systems Change the Role of the Primary Care Practitioner?

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Introduction

The much-heralded computer age is truly upon us. The computer is now a feature of our everyday life--in banks and grocery stores, hotels and libraries, service stations and stock exchanges. Managing information effectively is an essential requirement for succeeding in the world today, regardless of one's occupation or profession.

It is curious, then, that for all the impressive developments in information technology and the astonishing advances in medical science and technology over the past 20 years, so little has changed in the way physicians manage information related to the care of their patients. This is despite growing computer access and computer literacy in society at large and significant achievements in application of computers and decision-support technologies to areas both related and unrelated to health care. It is also in spite of health care practitioners' great and growing need for help in managing the information explosion in the health professions.

Let's begin with an example. While all of us know some physicians who rely on computer technology for managing aspects of their clinical practice, these physicians are not yet the norm. The average primary care practitioner today is acquainted with and uses computers in the office, but this acquaintance is neither broad nor deep, and the use tends more toward word-processing and billing than toward more complex or integrated data management. Schmittling has reported survey data from the late 1980's showing that the offices of nearly half the active family practitioners used a computer, principally for billing and related practice management purposes.[1] Only a quarter of these office-based computers were equipped with a modem or were used for patient scheduling. Patient records were partially computerized in only one of six family practice offices. Only two of five family physicians reported having a personal or home computer.

Schmittling's report documented what is still largely true today, namely that, while computer use in physicians' practices was up over the findings of earlier surveys, medicine still has substantial distance to go before it can boast of ubiquitous computer access and information technology applications in clinical practice. Neither is there as yet much large-scale "networking" of the application of computers and related new information technologies to clinical practice. But these situations are about to change. Comprehensive integrated information systems and computer workstations for clinicians' offices and computer networks for health care are clearly on the way, and none too soon. The decade of the 1990's promises progress equal at least to that of the past 20 years.

New Information Technologies for Health Care Practice

Before speaking specifically about primary care practitioners, we will offer some background on new information technologies that are or will be available to health care practitioners. We will comment also on the implications of these technologies for professional behavior. Keep in mind that this is really a forward-looking exercise--and we should probably be communicating all of this in the future tense--because widespread and substantive use of these technologies in health care is still some years away.

Information systems, or information management technologies, have evolved dramatically in recent years to move our society beyond paper, pen, typewriter, and copier as the preferred means of recording and storing information and beyond messengers, the telephone, and the mail service as the preferred means of transmitting information. Since the 1970's, we have moved with greater and greater speed toward reliance on computerized, electronic means of gathering, recording, storing, and transmitting information. The leading edge of information technology today features sophisticated, high-speed computer hardware of various sizes and computational capacities, a rapidly expanding menu of software, fiberoptics and other technologies for telecommunications and computer networking, and a variety of databases for organizing and analyzing information.

As each year of this decade unfolds, computerized information management tools specifically adapted to health care settings will offer practitioners of all types powerful new ways of managing yet another aspect of their practice environment. The new technologies will maintain patient records and, further, will broaden the clinical utility of the patient record to incorporate clinical practice guidelines and better quality review. These technologies will thus help to reduce administrative burdens imposed by scheduling and billing and thereby contribute to greater patient satisfaction. By delivering problem-specific information on a timely basis to the point of need, they will improve quality of care and help to manage costs. They will afford the physician immediate access to clinical information resources and decision support. The new technologies will offer the practitioner opportunities to participate in clinical or health services research that uses practice data collected from and shared with multiple practice sites. Computerized information systems also will be the means by which physicians access continuing professional education that is practice-specific.

These information management systems will also make possible new electronic linkages among individuals and institutions that will serve to overcome the isolation of practitioners and the disadvantages imposed on them by time and distance.

Computer-based networks will set up a rapid and highly efficient two-way flow of information that is beneficial to practitioners in a variety of settings--in high-density urban areas, in large academic health centers, in suburban clinics, and in remote rural practices. Computer networking will connect doctors to one another and also to clinics, hospitals, emergency services, laboratories, medical and nursing schools, regional health sciences libraries and the National Library of Medicine, pharmacies, clinical research sites, centers for continuing professional education, health departments, professional societies--even home. Network configurations will be tailored to suit the needs and preferences of the participants.

Now, combining all of these new technologies, let's imagine (as have others before us, like Shortliffe) as a case in point the ideal information management system for a practicing physician's office in the year 2000.[2] A single personal computer would maintain the physician's schedule, manage office correspondence, handle all facets of billing, track patient followup, and schedule patients for health maintenance strategies such as immunizations and preventive screenings. The computer would provide clinical decision support for diagnostic or therapeutic purposes, offer digital storage and display of radiographic and other images, and, of key importance, store and update patient records. Entries to the computer-based record could be made either by typing or by voice, with the computer "recognizing" and then digitizing the physician's speech.[3] The office computer would be linked through a modem to an area network and would thereby carry electronic mail messages to and from colleagues, transmit prescriptions to pharmacies, send and receive lab orders and results, analyze and interpret clinical data, request consultations, receive discharge summaries on hospitalized patients, and--assuming that third-party payors are still around at the millenium--submit insurance and billing information.

As a party in the electronic network, the computer would also analyze trends among selected patient populations within this particular practice or across a cluster of practices, send and receive data from tumor registries, report secondary data sets to the Centers for Disease Control or the Food and Drug Administration, access clinical practice guidelines, search bibliographic databases and retrieve medical literature, subscribe to electronic journals, and access interactive recertification preparatory courses tailored to the physician's own practice, regional care patterns, and clinical interests. Finally, using patient education software, this computer would drive an office-based system of computerized patient education that would be a powerful yet affordable adjunct to the physician's personal teaching with patients. Computer programs for patient education and health maintenance would extend as well into certain patients' homes or workplaces via networking; these linkages would offer clinical reminders and monitor chronic conditions in what would be the 21st century's version of the house call--an electronic home visit.

Clearly, a comprehensive information management system like this would offer immense help to any practitioner. Introducing such a system into the lives of most practitioners, however, would surely bring some unanticipated changes and would mandate some modifications in professional behavior. In the past, new nonmedical technologies brought into clinical practice have effectively restructured, even revolutionized, practice patterns and physician behavior--we are thinking here of the automobile and the telephone. The new information management technologies have similar potential to spark fundamental change.

Computer illiteracy on the part of physicians is a genuine barrier to general use of computerized information technologies in clinical practice. But physician usage is limited, too, because many computer systems and programs available today lack sufficient computational power or user-friendliness, or both. Both of these circumstances are changing rapidly, though. Teaching hospitals where medical graduates take their postgraduate clinical training increasingly are equipped with computer systems that yield the user more than they exact in frustration. Very soon, then, a whole generation of health professionals brought up on computers will be entering practice. These practitioners will expect to find, or will actively seek out, computer systems to support them in their clinical work. The computer, to them, will be a powerful, beneficial, and utterly necessary device. This human adjustment factor will do as much as friendlier hardware and software to speed the diffusion of information science and technology into the practice setting. The cost of information systems for individual practitioners' offices may remain a very real obstacle for a while yet, but we are already seeing prices drop dramatically as technologies proliferate, improve, and compete for market share.

Computer-Based Patient Record-Keeping

Technology is not the only essential ingredient for achieving a comprehensive integrated information management system for practitioners. Information systems are only as effective as the quality of the data they contain. Just as the focus of health care is the patient (i.e., all other activities ultimately support the delivery of patient care), so should the core of any practitioner's information management system be patient data or records. This means that particular attention must be given to the improvement of patient records, including the development and implementation of comprehensive computer-based patient record systems for all health care settings.

Both the U.S. General Accounting Office (GAO) and the Institute of Medicine (IOM) recognize that computer-based patient record systems offer significant potential to affect the quality and cost of health care in the coming decade and beyond.[4,5] As the IOM report emphasizes, however, merely computerizing the existing patient record and storing it, for instance on optical disks, will not be sufficient. We must continually strive to improve the quality of the data that are collected and ensure that we are collecting appropriate data that can be used in meaningful ways (e.g., functional status, patient outcomes research) to improve both the scientific and humanistic bases of clinical care. The individual clinician must be responsible for entering data into the record, and in most instances the data should be formatted so as to allow others who have rightful access to this information to understand the clinician's rationale for key clinical decisions. All of this should become commonplace in the patient record. To achieve this will require, among other things, greater emphasis on standards of coding and naming so that data will have consistent meaning across a variety of settings and over time.[6] Another requirement will be composite data dictionaries that provide clear definitions of standard terms.[7]

These improvements must develop in the context of a broader understanding of the role of patient records in health care. The computer-based patient record is not simply an electronically formatted version of the present paper medical record. As medical educators, we must place greater emphasis on clinical record-keeping, recognizing that the information in the record has multiple uses, some immediate, some far-reaching. Over time, practitioners will come to view the patient record as the valuable resource it can and should be across the full spectrum of the health care system--from the level of the individual patient's care, to scientific assessments of care, to the creation of better health care policy. Properly maintained, such records will become the basis for generating scientifically valid and reliable iterations of practice guidelines for clinical decision support and quality assurance.

To be effective, the computer-based patient record must hold genuine functional benefits for clinicians. That is to say, patient records must offer practitioners enough benefits to offset the increased attention that we are asking them to devote to record-keeping. There will be a price exacted--all major new technologies have their quirks to which we must adapt. Computer-based patient records will have to offer the prospect of increased efficiency (e.g., automated generation of routine forms or easy access to on-line diagnostic standards), and, more importantly, of enhanced quality of care and ease of practice.

The IOM report offers the following minimum requirements for future computer-based patient record systems:

- Contain a problem list with the status of each problem
- Encourage health status and functional level measurement to promote outcomes assessment
- Document clinical rationale
- Link to other clinical records over time
- Protect confidentiality comprehensively
- Provide timely accessibility to authorized individuals
- Allow selective retrieval and formatting of data elements

- Link to local and remote knowledge resources, literature, databases, and systems to aid decision making

- Assist and guide clinical problem solving

- Support data collection and storage with a defined vocabulary

- Help manage quality and cost of care

- Be flexible and expandable to meet needs over time.

This list applies to primary care settings as much as--or more than--it applies to any other clinical setting, for reasons we shall now explore.

Information Technology and the Primary Care Practitioner

Computers and other information management technologies have the potential to empower as never before the practitioner in the primary care setting. However much computerized information technologies affect health care practice in the various specialties and subspecialties--and we think they will affect it substantially--they will, we believe, bring to primary care or general practice the most sweeping and profound changes of all. This is true more because of the nature of these two different types of practice than because of the characteristics of the new technologies that might be used in each practice setting.

Knowledge Currency

Relative to subspecialists, primary care practitioners have broader information needs. With the exuberant growth in the knowledge base of medicine and the astonishing proliferation of medical journals, the primary care physician needs to stay abreast of developments in a very broad range of medical knowledge, including a number of subspecialties. Thus, he or she is likely to deal with a greater volume of diverse medical information pertinent to his or her practice than a subspecialist.

It is something of an understatement to say that our present ways of updating our personal medical knowledge bases are not well-suited to the dimensions of the information explosion that is upon us. Huth has made a compelling argument for better and more careful specification of the information physicians need and the importance of the cost tradeoffs involved.[8] Williamson and colleagues have begun such an effort through an interview process.[9] Less than one-third of interviewees personally searched the medical literature when they needed information. A 1980 study revealed that physicians made extensive use of unsolicited medical literature, and this was particularly true for those in solo practice in rural settings.[10]

We must make it easier for busy practitioners to find, select, and use the information they need, if we expect them to make the effort. Computers and communications technologies can provide the practitioner with efficient and powerful means for keeping his or her medical knowledge base current and for acquiring specialty and subspecialty knowledge whenever this is required. Electronic networks that tie community-based practitioners to academic health centers for purposes of clinical updates and patient- or problem-specific consultations can help the practitioner stay well-informed. Similarly, computer-based medical information updates, interactive "refresher" courses, and subspecialty study modules available on disk provide physicians with convenient means of self-education. And, personal computer-based bibliographic services that put the medical literature at the physician's fingertips are key to the busy physician's maintenance of a current knowledge base, as are new systems of sorting, classifying, and abstracting medical knowledge.

As sophisticated software programs--and clinical science itself--develop further, primary care practitioners may be able to obtain patient-specific advice through optical scanners that will access literature databases from either the National Library of Medicine or a regional medical library. Bellamy and colleagues recently reviewed the use of remote access to electronic library services on a university campus and found such linkages to be an extension of and supplement to students' and faculty members' in-house library use.[11] For a physician practicing in a more isolated setting with less than adequate library resources, such linkages might assume much greater importance--an electronic lifeline at times, if you will. Haynes and associates have studied the use and usefulness of on-line access to MEDLINE in clinical settings.[12] By the practitioners' own admission, nearly half of their MEDLINE searches that related to patient problems materially influenced their clinical decision making.

Use of the new information technologies to stay abreast of developments in medicine can contribute to practitioner confidence, reduce reliance on specialty and subspecialty referrals, and increase the efficiency of office practice and the quality of care given.

These knowledge resources and linkages also may help give the practitioner the time and information to serve as a community-based clinical preceptor for medical students and residents.

Decision Support

Because primary care practitioners of necessity must be knowledgeable about a very broad range of medical knowledge, they may have a far greater need for decision support than subspecialists, whether or not they recognize this need. Computer-based clinical decision support on a far more sophisticated basis than is currently available could have a very significant effect on the quality of care a primary care practitioner provides. In not too many years, decision support tools--for example, diagnostic and therapeutic algorithms, clinical practice standards integrated into computer-based record-keeping systems, computer models for diagnostic and therapeutic decision making, data analyses based on outcomes research--are likely to affect not only the efficacy and quality of care but the costs of care as well. Erdman has described such a model related to psychiatric illness.[13]

Longitudinal Care and Networking

Practitioners of primary care are far more likely than subspecialists to follow their patients over time. Subspecialty care tends to be more episodic, discontinuous, and focused, while primary care entails seeing patients for a wide variety of illnesses that ebb and flow over the years. The primary care physician thus may find computer-based systems that track individual patients' various problems and remind them when to return for various preventive measures and screening tests disproportionately more helpful.

All purveyors of primary care necessarily must have a way to network with the rest of the health care system so as to provide the best clinical care possible, guide and refer patients appropriately to other specialists and subspecialists, and follow patients longitudinally through a variety of health care encounters. These needs for networking apply equally to the general internist practitioner whose practice is located within a busy academic health center, to the family practitioner whose office is across town from the community hospital, and to the general pediatrician who practices in a rural area remote from a tertiary-care hospital.

In time, there will be networks with fiberoptic linkage to hospitals and clinics and throughout the entire community of practitioners. The more isolated generalist will be able to "converse" and share radiographic and other images on a continuing basis with those physicians to whom he or she has referred patients for surgical or other sophisticated procedures. Patients who return to their communities from tertiary care centers on complicated drug regimens will more likely be followed accurately from a distance if information can be promptly and easily passed between the community and the academic health center. Similarly, networking affords the primary care practitioner opportunities to engage in clinical research. When patients have conditions like some cancers for which there is a complicated protocol, there is even the opportunity for the community-based primary care clinicians to participate with their academically based colleagues in clinical research. This should make the practice of primary care more interesting to the practitioner.

As described by Gardner and Perry, early efforts to accomplish productive linkages between clinicians' office practices and regional hospitals proved not a simple challenge.[14] They point out that 60 percent of remote hospital links were not satisfying. Of those hospitals that had not created linkages, cost was the most common reason given for not doing so. Technical hurdles also exist, including a variety of linkages between specialized and sophisticated systems to ensure that these diverse systems can "talk" with one another easily and clearly. Gardner and Perry found a system at SwedishAmerican Hospital in Rockford, Illinois, to be well-accepted among the physicians on staff. They reported about 100 electronic mail messages per day exchanged among subspecialists and generalists. A somewhat similar experience is noted at the University of Virginia Health Sciences Center, where more and more people are being brought on line.

With comprehensive, integrated networking, a primary care practitioner will be able, with proper identifiers, to gain access to the computer-based hospital record of his or her patient under the care of a subspecialist at a hospital 50 miles away, so as to review that patient's care plan, test results, and progress. Network connections also can make possible electronic "conversations," on a delayed or real-time basis, between referring physicians and hospital staff physicians about a patient's course and management. Clinical information transmitted on the electronic network to hospital physicians prior to a patient's referral may well reduce the need for as much direct consultation between physicians as now occurs. And, electronic mail can enable the primary care practitioner to provide promptly the hospital physicians with additional background information about the patient, if such information becomes pertinent to the patient's care. Similarly, at discharge, the patient's discharge summary, instructions, followup schedule, and even the entire hospital record can be made available to the local practitioner via the electronic network--there is no need for mail or even fax communication.

Practitioner Isolation and Networking

The very nature of primary care practice contributes to the possibility that those engaged in it will experience considerable isolation. For many, this isolation is both geographic and professional. More often than not, primary care practitioners work one-on-one with patients, independent of and apart from many of their fellow physicians, regardless of whether these peers are next door or in the next town. Isolation, actual or felt, can have important implications for the confidence of some practitioners and, consequently, for their practice performance. The fact that this isolation seems to come disproportionately with the primary care "territory" appears to figure significantly in medical students' specialty choices. One of the most important promises of the new information technologies is their ability to help physicians overcome isolation imposed by time, distance, and the conditions of solo or small-group practice. Computers and related communication technologies can reduce the professional and social isolation of the practitioner through electronic networking that offers them e-mail and other computerized information services and has the capability to link them with consultant subspecialists, health care institutions such as hospitals and nursing homes, other primary care practices, community health agencies, educational and social service resources, even recreational interests. An important consideration in a time when many regions of our country are without adequate local health care services is that computer networking on a sophisticated level may offer physicians in these geographically remote areas sufficient professional support that they will more easily be attracted to and likely to remain in these underserved areas.

Health Care Management and Cost Containment

From the foregoing discussions, it should be clear that computers and related communications technologies also can be highly useful in supporting the primary care practitioner in the role of "gatekeeper" to the health care system. The primary care physician is the patient's point of entry into the system. As the physician ultimately responsible for the patient--for referrals to subspecialists and adjunct medical services, for admissions to hospitals and nursing homes, for tracking primary and other levels of care longitudinally, and for maintaining the most comprehensive medical record the patient has--the primary care practitioner plays a crucial role in determining for that patient what is appropriate care, which subspecialty providers and health care services are accessed, and how efficacious and cost-effective these services prove to be in the long run.

Cost-containment pressures in recent years have spawned hundreds of managed-care plans that require physician gatekeepers who are primary care specialists. Certainly, there has been far more rhetoric than available data would justify about this model of care having great potential for improving costs without jeopardizing quality. However, as information science and information technologies mature, this model of practice indeed may have not only theoretical advantages but genuine strengths. At that point, the success of managed-care plans in holding down health care costs while ensuring quality of care probably will depend more on the expertise of the gatekeeper physician, armed with a knowledgeable and friendly computer, than it will on any other organizational or administrative feature of such plans or practices. The burden on primary care physicians in managed care settings will thus be substantial, and it will become critical that these practitioners have at their disposal and be adept at using all information technologies that can contribute meaningfully to the best and most cost-effective patient care.

Should managed care prove successful from both the economic and ethical perspectives, it is likely that the generalist would rapidly regain parity with the subspecialist in our system. Indeed, if the knowledge imbalance is offset by computers, generalists quite possibly could surpass subspecialists as the power brokers in the health care system. Certainly, medical students contemplating specialty choices would then see a very different balance of power on the practice scene than that which now prevails.

Health Maintenance, Prevention, and Public Health

With the growing sophistication and proliferation of the new information technologies, there is great potential for collecting and analyzing both individual and aggregate data on health status and disease patterns among patient populations, including the patient populations of individual practitioners or of all practitioners throughout a region. For primary care physicians, this may bring opportunities to participate in epidemiologic and outcomes research that will contribute to local, regional, or statewide health planning and policy making. It may also give the primary care provider the information necessary to play an expanded role with individual patients and in the community in terms of comprehensive and longitudinal care, health maintenance, and disease prevention. We would expect, then, that the primary care physician will broaden his or her approach to health and health care and that his or her practice will assume a decidedly preventive character.

Data on outcomes of chronic illness have the potential to change the scope and character of medical practice and to revise how physicians and patients define "illness." The new technologies will give the health professions the capability to collect, analyze, and apply--in the form of health education and new health care strategies--a wide variety of information from patients and the community at large. This information will profile not only biological health but also psychosocial health, and lifestyle and health-related habits and risks as well.

Although corroborating research is needed, it appears that patients' overall health status and their outcomes from chronic illness depend as much on personal lifestyle choices, behaviors, and attitudes as on medical care received. For primary care practitioners, a substantial portion of whose practice is longitudinal care of chronic conditions, one key practice objective is to help patients integrate optimal management of their illness into their daily lives and reduce other health-related risks. Increasingly, to facilitate this, primary care (and other) practitioners are adopting a comprehensive biopsychosocial approach to patient care. Among other things, this means broadening the scope of the history and restructuring somewhat the medical interview and followup. Using this approach, physicians gain greater proximity to patients' everyday lives and to the myriad lifestyle and behavioral choices patients make. Certainly, influencing patients in healthful ways so as to prevent disease or minimize its impact has important benefits, including economic benefits, both for patients and their families and for society.

This shift to the *biopsychosocial* model for patient care, facilitated by information made available through the new technologies, is significant and not to be underestimated. Anecdotally, at least, this more inclusive approach to personal health seems an important contributor to improved outcomes as well as to patient satisfaction and compliance. For individual physicians (and for the medical profession as a whole), the degree to which, in practice, their skills, attitudes, and values genuinely meet the changing needs of patients determines their professional fitness for the future. If medicine--and the medical education system--cannot or will not make the changes in orientation that the biopsychosocial model entails, then there will be ample opportunities for nurses, other health care professionals, or even practitioners representing alternative or nontraditional health professions to step in and play expanded roles in patient care.

The new technologies also have potential to serve the public health. They will enable the practitioner to profile and monitor the health status, behaviors, and risks of individual patients and a variety of subpopulations within his or her practice; health care services can then be tailored to meet the particular demonstrated needs of the practice population. At the community level, the local practitioner may be expected--by patients and health care planners alike--to keep an eye on the health profiles of local or regional populations, on any local or regional environmental risk factors, and on the needs of those populations for health education, specialty health services, and ancillary support services. Especially in rural areas, primary care physicians increasingly will play what is really something of a public health role and, as a result, may reemerge as their communities' leading advocates for health.

Equally exciting is the potential for the new technologies to affect public health in yet another way. Health researchers studying secondary data sets will be able to collate and analyze clinical data routinely downloaded from regional medical practices so as to identify patterns of both disease incidence and health care practice that fall outside expected ranges. This has implications not only for improving the quality of physicians' practice but also for identifying outbreaks of disease (e.g., infections due to antibiotic-resistant bacteria) or "epidemics" of health-related behaviors (e.g., domestic violence or substance abuse) that may otherwise go unnoticed and untreated.

Quality of Care and Clinical Guidelines

Computers and the other new information technologies have the potential as assessment tools to contribute substantially to the framing of scientifically based clinical guidelines and to improvements in quality of care. The capacity to aggregate data from secondary data sets will allow primary care practitioners to examine not only the individual records of their patients for purposes of quality assurance but also to see how their own practice outcomes compare regionally with those of their peers who have similar practice profiles. Such feedback, if it is specific, timely, and judged to be valid and reliable, can have a very powerful effect upon physician performance. Assessments like this will contribute substantially to continuous improvement in the quality of the care the physicians give.

Too many clinical performance standards today, including the board examinations, rely on clinical material that may or may not parallel one's practice or patient population. On the horizon is a system that could supplant board exams, dated and unreliable indicators of performance, with ongoing, computer-based, practice-specific evaluations.

Further development and diffusion of clinical guidelines will contribute to the creation of more and better computer-based decision support tools. Clinicians will then be able to embed decision-support systems in their computer-based patient record systems so as to improve clinical judgment and to sharpen decision making capability in their own identified areas of deficiency. Additionally, since primary care physicians encounter a great number of common clinical conditions and only a few truly atypical ones, decision supports embedded in the record system can flag symptoms, signs, and test results that may subtly but definitely point to serious but less-than-obvious clinical presentations. Such systems may be more useful for ensuring quality of care in general practice than in subspecialty settings. Further, once diagnosis is made, the decision support programs may increase the likelihood that the physician will pursue further appropriate treatment or subspecialty referral.

The potential of scanning systems that link the medical literature directly with clinical care to improve quality and contain costs is, we believe, profound. These computer-based systems eventually may be able to work on a batch basis at the end of a day's practice; optical scanners or "smart" programs that match key words may access regional literature resources and offer to the clinician problem-specific literature on a need-to-know basis. In a similar fashion, clinical alerts relevant to the practice patterns of the generalist should soon come on line; these will give the clinician periodic practice-specific knowledge updates, based on large sample sizes.

A cautionary note: although we were not able to find literature documenting this, it seems to us that our health care system encourages and rewards innovation by primary care or general physicians far less than it does innovation by subspecialists. If this is true, trends may slow both the development of appropriate computer software to support decision making among primary care practitioners and the incorporation into primary care settings and practice patterns of such decision-support tools.

Information Technologies in the Primary Care of Large Populations

Let us insert here a brief note on a global scale. This illustrates from another angle the power of the new information technologies to affect primary care. There are, of course, dramatically different patterns of disease and health care needs across the nations of the world. Already we are seeing the development and deployment of some fascinating computer applications to primary health care in developing countries. In Thailand, for example, a program now in use focuses not only on basic health services for a needy population but also on adequate food intake, good housing, and full employment. Certainly, if we are to monitor global progress toward the World Health Organization's goal of "Health for All by the Year 2000," computer support will be essential in many parts of the world. Wilson and Smith do a commendable job of describing microcomputer applications for primary care in the developing world and sum up many lessons learned the hard way.[15] And Bertrand has described ways in which laptop microcomputers and conventional software programs can allow quick and convenient surveys of value to be done in the field.[16]

Conclusion

It is apparent that whatever medical specialty--and wherever--one practices in the future, success will depend in part on one's computer literacy. We applaud and echo here Henry's admonition that each medical student be required to have a desktop computer upon entry into medical school and that medical schools make facility with computers a condition for the student's successful completion of the curriculum.[17] It simply will not do for us to teach our students and residents one way--that is, without, or only minimally with, computers--only to have them graduate into a world that expects them to practice another way. Computers certainly will be an integral part of their everyday professional life.

We have talked here of how some major advances in information technology, notably office computer systems, computer-based patient records, and communications networking, have the potential to effect profound change in the ways primary care practitioners go about their work. The capacity of these technologies for reconfiguring and reorganizing not only *how* primary care physicians practice but *what* exactly their clinical practice pattern is, is profound.

Even so, there are other information technologies, most of them on a much smaller scale, that can be seen as the advance parties for this medical practice revolution. These technologies are tiny but powerful. We will mention two of them. One is the pocketsized electronic planner that more and more physicians depend on as an adjunct to their office-based scheduling systems and patient directories. The second is the newest generation of very small portable, hand-held computers, known affectionately by their owners as "palmtops" because they fit in the palm of the hand. Palmtops have found enthusiastic users in a wide variety of occupations and professions, but they appeal particularly to persons whose work necessarily takes them far from a desk--environmental scientists, engineers, sales representatives, architects, and, of course, physicians. Doctors take palmtops into the hospital or the clinic exam room, where the computer then keeps notes on patients, computes individual therapeutic drug dosages, profiles a patient's health status and calculates risk factors.

These two technologies are already in fairly common use today, and they, and others, are changing, even subtly, the way physicians practice. Ten years ago, we would venture, these technologies were virtually unknown. We mention them here so as to call your attention to the astonishing pace of change in information science and technology. We expect that a good many of the "futuristic" innovations in information technology that we have discussed here will be in our midst in very short order, certainly by the end of the decade. We had better be ready for them, and not least for the good of our patients.

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Role of Primary Care in the Mainstream: Is Primary Care for Everyone?

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There appears to be a growing consensus that health care should be made available to all U.S. citizens, regardless of income, status, or geographic location. Evidence of this trend is seen in most of the proposals for reform of the health care system which are now surfacing in anticipation of the 1992 national elections.

Achieving the objective of good medical care, available to all persons in the United States, is blocked by two well recognized characteristics of the current system of care: 1) high cost, and 2) uneven distribution of providers and other resources.

Some students of the U.S. health care system assume that these characteristics are closely related to the unbalanced emphasis in the United States on high technology diagnostic devices and end-stage therapies, rather than on prevention, early detection, and early treatment of illness. They conclude that the best way to correct these problems is to redress the imbalance by increasing the emphasis on primary care.

Others disagree, pointing out that the overgrowth in highly technical devices and end-stage therapies is but an example of the public voting with its feet, expressing its free choice of these dramatic advances over more mundane, and perhaps less critical elements of medical care. This group concludes that these aspects of medical care, though expensive, should be extended to all citizens, regardless of income or location.

Still others concede that primary care might be a necessary component of medical care in sparsely populated areas of the country, at some sacrifice of "quality," but they conclude that medical care in most population centers can be carried out equally well, if not better, by an array of specialists and subspecialists, which can, in aggregate, provide for all needs of the population. Still others feel that the specialist-subspecialist model can cover all areas, highly populated and sparsely populated, with the addition of an adequate transportation system to transfer those from remote areas to locations in which care can be provided.

This debate has profound implications for those responsible for planning the health care system. If those who feel that increased levels of primary care are required for a rational and affordable health care system are correct, then we should be transforming medical schools and residencies to meet these requirements. The inertia of the physician manpower training system will require decades to achieve the goal of a substantial increase in the percentage of primary care graduates.

Most of the practitioners who will emerge to provide medical care in the year 2000 have already committed themselves to a specialty or subspecialty choice, and in most cases, this choice will dictate the broad characteristics of the community in which they will practice.

A referral specialist can only function in an environment in which other specialists are present, allowing him/her to concentrate on a small segment of the population needing that type of care. This dictates medical practice in a larger population center, and usually one with a well staffed and well equipped hospital. Changes emerging from the 1992 political debate will not have their effect until after the presidential elections in 2000!

What is the evidence that increased emphasis on primary care can have a favorable effect on distribution, cost, and quality of health care? As with most such issues, there is no conclusive, definitive study or set of studies that will answer this question. Evidence about some aspects of this question is nonexistent; on other aspects it is spotty and/or inconclusive. Yet, some useful information does exist. For the most part, the planner must still rely on informed guesses, intuition, and even faith, in making decisions.

Geographic Distribution of Medical Care

There is reliable evidence that rural areas have a lower physician-to-population ratio than urban areas (Kindig, 1989). However, this difference in supply of physicians does not address the fact that there might be offsetting differences in true biologic need for medical care, nor does it address the preferences of the populations of either urban or rural populations. Rural populations are generally more elderly, less likely to have private, employment based insurance, and more likely to depend on self-care, rather than professional care. All of these factors, plus others, affect both need and demand for physicians, some in one direction, some in another. The data required to estimate optimal numbers of doctors and other providers are not available.

Experience indicates that those physicians electing to practice in rural areas are primary care physicians, and most are family physicians. Most physicians desire some degree of control over time and on-call responsibilities, to avoid the onset of burnout and/or family dissatisfaction. To accomplish this, most physicians desire a practice setting in which the sharing of professional on-call time with other physicians is possible. Two or three family physicians can cover one another in such an arrangement, while still meeting community needs for coverage of all age groups, and most medical problems. General pediatricians, general internists, and obstetrician-gynecologists face two problems. Each of these types of primary care physicians needs the other two to meet all community needs, and each needs a much larger community size to generate the necessary demand for its services.

The pragmatic answer to the question about the need for physicians in rural areas is that increased numbers of primary care physicians, and especially family physicians, is necessary in order to correct the unequal urban-rural distribution of doctors within our Nation.

However, this does not answer those who conclude that the best use of medical manpower might be to establish large physician aggregations in larger population centers, and to develop a transportation system to bring rural patients to those physicians. To an extent, the shortage of rural physicians has already led to the adoption of this alternative in many areas. In many rural communities, the more mobile and more affluent segments of the population travel the distance to a larger medical community, where they receive the same care as the residents of the larger community.

Those who cannot avail themselves of this option are the frail elderly, who lack the physical ability and/or the transportation required to make the journey to the larger town, and the poor and uninsured, who are not accepted in the larger medical community.

In many States, Medicaid and Medicare payments to primary care physicians are so low that they lose money seeing patients with such insurance coverage. As a result, those who serve populations with a high percentage of beneficiaries of these payment systems must limit the percentage of Medicaid and Medicare patients in order to survive. A common pattern is to reject all Medicaid patients, and to limit Medicare patients to those who were patients before reaching the age of eligibility.

Hospitals are usually county tax-based or private not-for-profit entities, which face the same problems as the private physician. They cannot accept the poor and uninsured from nearby towns and counties, if they are to remain solvent. In contrast to the individual physician or the physician group, they cannot categorically bar access, but they do erect less apparent barriers.

For all of these reasons, the option of obtaining medical care in a larger and better served community does not work for those who need it most: the frail elderly and the indigent. For financial reasons, they cannot gain access.

Most areas of the country have observed a deterioration in the geographic imbalance in medical manpower in the past five years. States with large rural populations are concerned to the point of mounting extensive loan forgiveness and practice support systems for rural physicians. Our own experience in North Carolina is the same, even though these loan and practice support systems have been present for 20 years.

The major problem is the lack of sufficient numbers of primary care physicians in primary care residencies. Our evidence points to economic issues, particularly the young physician's perception of the lifetime financial rewards and the lifestyle of a primary care physician, especially a rural primary care physician, as compared to the more highly rewarded medical specialties.

Will a greater emphasis on the training of primary care physicians assist in solving either the problem of inadequate numbers of primary care physicians for underserved rural areas, or the problem of better access for rural people who seek care in larger communities? Probably not, unless the payment system for such physicians is restructured to allow them to care for the poor and the elderly without financial sacrifice.

Even if this were accomplished, as has been promised under the recently adopted resource based relative value system, the option of transporting rural dwellers to more urban locations does not address their desire to get their care close to home, especially in a life threatening emergency.

The conclusion I reach is that the case for emphasis on primary care must be made on the basis of its benefits for the population as a whole, not its special benefits for the underserved in rural or other geographically defined areas.

A corollary conclusion is that much of the geographic maldistribution of medical care is a result of low payments to primary care physicians by Medicare and Medicaid, the two sources that comprise a large percentage of the income to physicians in rural areas. The maldistribution can only be solved by redressing this financial inequity.

The Cost of Care

A major component of the continued rise in the cost of medical care is the increased use of expensive tests. There is reliable evidence that some doctors order an excessive number of such tests. As a group, family physicians order fewer tests than internists in caring for the same types of patients (Cherkin, 1987; Bowman, 1990; Conry, 1991). Family physicians also request fewer consultations, spend less time with each patient, and hospitalize less. These differences between the two types of primary care physicians seem to produce no detectable differences in outcome of care.

Several reasons have been proposed for these differences, including training differences, different styles of decision making, differences in patients and types of visits, etc. (Bowman, 1990). Differences in the ability of individual physicians to deal with uncertainty may also be an important factor.

Whatever the underlying cause, the cost differences between the high and low users of tests could lead to very large cost differences. Cherkin (1991) estimates that the difference in rate of utilization of radiographs between internists and family physicians would cost over $100 million, if all family physicians adopted the higher utilization rate of internists in their patient care.

Most of the cost and outcome comparisons between specialties have been between two types of primary care, albeit between a more general and a more limited type of primary care. Most comparisons have been those between family medicine and internal medicine, as in the studies cited above. Comparisons between family physicians and obstetrician-gynecologists have also been conducted. Family physicians utilized fewer inductions of labor, less analgesia, and less anesthesia, with no differences in operative intervention, and no differences in other outcomes (Phillips, 1978).

There are very few published comparisons of primary care and non-primary care specialties in caring for similar patients. Payne (1976) reported that specialists, caring for patients appropriate for their specialty, discharged their patients after a shorter hospital stay, and with higher quality scores than generalists caring for similar patients.

Garg (1979) found similar results in length of hospitalization of patients with three cardiovascular conditions and two urologic conditions. In caring for cardiovascular conditions, cardiologists discharged their patients with fewer days of care than did general internists and family physicians. Urologists discharged urologic patients in fewer days than did their primary care counterparts. In contrast to the observations by Payne, Garg found no significant difference in quality measures. These studies postulate that "treatment intensive" care by appropriate specialists can save costs for hospitalized patients.

In summary, the published evidence for cost savings by greater utilization of primary care is mixed. While the more generally trained physician probably utilizes laboratory and other tests less often than others, the higher level specialist may be more efficient in utilization of days of hospital care when caring for patients within his/her specialty.

Notwithstanding these published studies, the conventional wisdom is that each specialist and subspecialist seeks the opportunity to use his/her special tools, and that this translates into a much higher level of cost of care. Certainly the utilization of the narrower subspecialists for the care of most of the ordinary cases of an illness which might be handled competently by general physicians is an inefficient utilization of highly trained manpower.

Quality of Care

Most of the studies cited above, comparing family practice to other primary care specialties, have shown no measurable differences in patient outcomes. Payne's comparison of specialists and generalists in the care of hospitalized patients, cited above, showed a higher level of quality of care by specialists than general physicians hospitalizing similar patients. The quality measure used in this study was an index of process measures, defined as quality by the specialists, rather than an outcome measure. Thus, there is legitimate doubt that this is a valid measure of quality.

While the evidence is not definitive, it seems to show that there is little or no improvement in outcomes from increasing levels of testing in the hands of competent physicians, and from the utilization of increasing levels of specialization.

The published evidence that specialists caring for patients within their own specialty may utilize hospital days more efficiently may be balanced by the fact that most adult patients have more than one problem. Comparisons of the efficiency of these same types of physicians in the care of patients with two or three coexistent problems, in several organ systems, might produce a very different outcome.

Protecting the Patient

Most of the above information is derived from studies related to the care of patients with specific organic illnesses. While important, care for patients with these illnesses represents only a portion of the task of the primary care physician.

Activities related to prevention of future illness may be even more important in a long-range perspective. Counseling and educational activities, particularly for asymptomatic patients, are almost exclusively the province of the primary care physician. While often less than perfect in reminding patients of the need for preventive interventions, and while often unsuccessful in achieving desired changes in life style, the primary care physician is the only one who characteristically accepts this responsibility.

Another important function of the primary care physician is that of filtering the complaints of patients, and sifting out those of possible significance for closer attention, from among the largely insignificant "noise" of nonspecific and benign symptoms. Left to interpret such symptoms from the base of their own state of knowledge and understanding, patients often misinterpret trivial symptoms as harbingers of threatening disease. An important role of the primary care physician is to protect the patient from an unnecessary excursion into diagnostic testing, when the likelihood of organic disease is very low.

At the other end of the spectrum, there are patients who fail to consult a physician at an appropriate time for effective intervention. While the trail from earliest symptom to consultation with an appropriate professional expert is complex, and involves differences in tolerance of pain and discomfort, denial of symptoms, fear of the unknown, and many other factors, it is logical that an ongoing relationship with a personal physician can shorten the process.

Another large segment of the practice of the primary care physician is the care of the patient with stress related and minor psychiatric illness. This represents perhaps more than half of primary care practice. Stress and minor psychiatric illnesses are frequently intermixed with organic illness.

The point of emphasizing these aspects of the practice of the primary care physician is to emphasize that a major role of the primary care physician is to protect the patient from himself or herself in the case of adverse lifestyles, from inappropriate, expensive and dangerous diagnostic procedures in the case of vague nonspecific symptoms, and from delayed diagnosis of treatable illness in the case of asymptomatic or minimally symptomatic illness.

These aspects of primary care are well known to the primary care practitioner, yet they are not well documented or frequently reported in the research literature relating to primary care practice. Family practice and general internal medicine clearly recognize and accept this component of care in training programs for their residents. Pediatrics has always included the prevention of illness through early detection, counseling, and appropriate immunizations.

Does Everyone Need a Primary Care Provider?

The answer is self-evident. Every patient should have access to a medical professional who can serve the role of personal adviser and manager on medical matters. A more relevant question is "Can a medical provider other than a physician trained in primary care serve this role?".

Many patients are well served by a specialist or subspecialist, who assumes the added role of primary care physician. While this is possible, and while examples can be readily found, it makes for a highly inefficient system. Most such physicians can do this for only a few of their "special" patients. Most such physicians frequently refer such patients for procedures that would be done routinely by a trained primary care physician. The investment of time and money in the extra years of specialist training also has no return in such an arrangement.

Some observers feel that we have trained too many physicians in subspecialties, and that an excess will appear over the next decade, causing some subspecialists to be underutilized. Utilization of these physicians as generalists has been proposed as a solution to both the problem of underutilization, and the shortage of primary care physicians in certain areas. This solution assumes that primary care can be "picked up" by such physicians, without extensive added training, and that they would locate in areas shunned by primary care physicians. Both assumptions appear false to this observer. Primary care is as much an attitudinal mindset as a set of specific skills, and it seems unlikely that a physician can transform himself/herself from a narrow referral mode to a primary care mode in a short period of time, after a career in the former state. It is even less likely that such a physician will leave the security of a hospital and a large contingent of supporting colleagues to go to a shortage area that does not have these advantages.

An even more frequently mentioned option is that of providing primary care services through a physician assistant or a nurse practitioner. There are many examples of the successful implementation of this model. Isolated rural satellite clinics, attached to a primary care physician as a backup, with telephone linkage, have been a part of medical care in many States for 25 years.

These clinics function well, and the level of patient satisfaction is very high. Objective measures of quality of care are equal to those seen in similar clinics with all physician staffing. Legal requirements in most States mandate that such midlevel practitioners work under the cognizance and supervision of a licensed physician, usually a primary care practitioner. Thus this option can be considered as a valid method for extending the services of a physician to a much wider area, and a much larger population base.

In truth, no physician, no matter how general or how highly specialized his/her training, is adequate to serve all patient care needs. Medical care is truly a team enterprise. In order to care properly for the medical needs of a practice population, the primary care physician needs a set of referral specialists, whose skills and interests are well known to him/her. Conversely, the referral specialist needs a group of primary care physicians who can care for the large number of problems encountered in the population, filtering out and referring those who need special care and special skill. Each is essential to the proper function of the other.

The system works with greatest efficiency when there is a proper numerical balance between the two, and when the initial filtering of patient problems is done at the more general end of the spectrum. The two tasks require a different search strategy. The primary care physician functions under an implied assumption that the problem is probably self-limited, and/or that the problem is the most likely possibility in the list of differential possibilities.

The referral specialist, on the other hand, functions under an implied assumption that this patient is more complex and complicated than the average patient, and that all reasonable possibilities must be explored and ruled out before falling back to the most obvious possibility.

Presented with a patient with severe headaches, a primary care physician can appropriately assume that the patient probably has stress related headaches, after a screening level history and physical examination, and a screening level neurological examination, all of which are negative for abnormal findings. The patient may then be treated accordingly, without a detailed neurological exam, MRI scans, lumbar puncture, etc. Treatment can be started, and if the response is as expected, no further workup may be required.

A consulting neurologist usually functions in a setting in which the patient has been referred by a colleague, who believes that something more than a "simple" headache might be present. In this setting, all stones must be turned so that a definitive opinion can be rendered about the nature of the problem. In this setting, the full diagnostic array might be utilized.

The primary care physician usually can presume that the patient will be seen again and again, and that other opportunities to evaluate the headache and its response to treatment will occur in the future. The referral specialist must assume that the patient will be returning to the referring doctor, and that this is probably the last opportunity to make the diagnosis.

Each of these two strategies is legitimate and useful in the proper setting. However, utilizing the referral specialist strategy for unfiltered problems will produce a great excess of tests and special studies, most of which may be unnecessary. Beyond the expense, many of these tests and special studies carry a significant risk in that they must be followed by other tests when the initial battery produces the inevitable false positive result. Time and money are obviously invested in each such instance, but there is also a finite risk of injury to the patient with any procedure, even a simple venepuncture.

Continuity of Care

Each individual needs a physician who knows his/her name. Ideally, this individual should be trained with the proper set of reflexes, appropriate to care for the range of unfiltered problems arising in a patient population. Ideally this physician should be available to the patient, directly or indirectly, at all times, in order to respond to acute needs, real or perceived.

This physician should know the circumstances of that patient, such as educational level, life style, occupation, family background, risk factors, past medical history, etc. The physician should also assume the responsibility for reminding the patient of needed screening tests and other risk avoiding actions.

These expectations, and others, can be grouped together under the well accepted primary care attribute of continuity of care. While well accepted as a desirable and even required feature, there is growing concern that it is unattainable.

In most primary care practices, the physician functions as a member of a group. While each patient may have one doctor in the group who is considered his/her doctor, all of the members of the group are called upon to care for the patient when the preferred doctor is off duty or temporarily out of contact. The sanctity of personal and family time is increasingly important for young physicians, who are much less willing than their predecessors to subjugate their personal lives to practice needs.

Is the ideal of continuity of care attainable? If not, how can the coordinating role of a primary care physician be established and/or maintained? This question is often asked by primary care residency directors, who are attempting to establish a valid model of primary care practice for training purposes. The answers in both that setting, and in practice, probably lie in a good, quickly available record system, and protocols and quality standards for the practice which are known to, accepted by, and used by all members of the group.

These problems of coordination and continuity were not problems in the general practice environment in existence prior to World War II. The solo general practitioner of that era was usually willing to respond at all times, and to provide to his patients any care that was available, including minor surgical procedures and obstetrical care. Most of us are very glad to trade the meager capabilities of that era for the enormous benefits of modern medical care, but the highly personal and responsive character of medical practice of that time are still desired by the public. The Marcus Welby image is still the preferred model.

Summary

Is the desire for a primary care physician for all a romantic ideal? Is the concept of a personal medical and health manager for each person an impossible dream, which disappeared with the Marcus Welbys? On the other hand, is it a complex and elusive concept that must be made a reality in order to achieve a rational and cost-effective medical care system?

There are no clear answers, and each observer can justify his/her own opinion, but I believe that such a system is both attainable and necessary for a rational health and medical care system. This system would provide each person with a personal health care provider who knows his/her name, and provides easy access for both real and perceived health problems, and for health advice.

Together, the patient and the primary care provider would devise a health care plan for the patient and provide advice regarding acute medical problems. Access to the referral specialist would only be available through this portal, except in an emergency. This provider would provide medical services appropriate for most medical problems, and ready access to referral specialists for those services beyond the capability or scope of primary care.

To me, this is an attainable, reasonable, and rational health care system, in which each part functions to the patient's best interest, without unnecessary testing, procedures, and treatments. For this system to function, there must be a primary care provider for each person, though each provider does not necessarily need to be a physician. On the other hand, there must be a primary care physician in the system, setting the standards and supervising the midlevel practitioner or other provider who interfaces directly with patients. There must also be a readily available record of relevant information concerning each patient.

Must the physician in this system be a primary care physician? I believe strongly that this is necessary. A physician with another background may be capable of answering many of the medical problems of a population, but there must be a wider set of skills, relating to the evaluation of the cost-effectiveness of various tests, procedures, and treatments, all specific to the primary care setting, rather than to the hospital setting, or to the referral specialist's office setting.

My own vision is one that is a bit ahead of today's family physician, primary care internist, and primary care pediatrician training. I foresee the need for a whole new segment of training, based on primary care research to be done in the next decade, directed at provision of cost-effective care, and including the optimum strategies for managing problems presented in the outpatient setting.

If this vision is to be a reality, a number of things must occur. First, there must be an improvement in the way in which the primary care physician is paid, relative to other physicians. Second, there must be a recognition of the integrative and coordinative role of the primary care physician, and a structural change in the system that mandates this role. Third, there must be continued progress in primary care research, providing new information, new excitement, and new directions for the primary care physicians of tomorrow, similar to the effects of biologic research on specialty practices over the past three decades.

I look forward to the day when these are accomplished, and in which all patients have a doctor who knows their name.

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How Can We Recruit and Retain More Primary Practitioners in Rural Areas and Inner Cities?

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Introduction

America's rural population depends on primary care providers for the majority of its health care. Primary care generally includes family practice, internal medicine and pediatrics. The primary care physician is the provider of first contact for the patient and the provider of continuity of care for the patient and the family. He or she makes the initial assessment and attempts to solve as many of the patient's problems as possible by coordinating the health care team.[1]

The reasons for the predominance of primary care providers in rural areas are varied. The availability of medical care in rural communities is closely tied to the supply and distribution of primary care providers. In general, the population base required to support primary care providers is less than for other specialties because of the diverse array of quality services that they can provide. It is also generally recognized that "more common or routine care should be available in all geographic areas or within a certain distance or travel time." (p. 12)[2] The end result is that rural communities are more dependent on primary care physicians and, as a result, more affected by trends in the supply of primary care physicians.

This brings us to the major concern on which I wish to focus: meeting the physician resource needs of our rural population. Over the past 40 years, the supply of physicians in the United States has increased substantially. The supply will continue to increase from 227/100,000 in 1985, and is estimated to reach 280/100,000 by the year 2010.[3] The growth in the overall supply of physicians has not, however, been accompanied by a concomitant growth in the supply of primary care physicians nor in the supply of physicians to some of the most needy rural areas.

Despite the near doubling of the supply of physicians between 1960 and 1985 (i.e., a total physician increase of 210,000 or 64 percent of all active physicians), rural America continues to be underserved. Without changes in physician geographic and specialty distribution problems, we will only continue to fail in our efforts to provide physicians for rural America. It is fully anticipated that rural America's physician shortage will continue, if not worsen over the coming decade. Recent studies support the notion that most rural areas have experienced either a stable or declining number of physicians over the last several decades. The rate of physician growth in rural areas is about one-fourth the rate of growth for urban areas, which is insufficient to meet physician human resources needs due to death, disability, retirement, and outmigration of rural physicians.[4] In fact, up to 25 percent of the rural physicians in sparsely populated areas will retire or relocate within the next five years, a fact corroborated by other recent studies.

> *There remain geographic areas of the country which are relatively undersupplied with primary care physicians. This is certainly the case for certain subspecialties as well but has been less well documented. Most areas have shown increases over the past decade as the result of the overall increase in physician supply, but rural and inner city areas have shown lower rates of increase for primary care physicians. There is significant variation in MD/100,000 population for counties less than 50,000 population, with the southern states having the lowest regional levels (pp.*50-51).[5]

Selection

Recent studies have shown that the various aspects of medical students' and residents' training experiences have a definite influence on choices of both specialty and practice location. Undergraduate clerkships that emphasize outpatient medicine facilitates both knowledge about and choices for primary care practice.[6] As the experience of almost two decades at the University of North Dakota has shown, educational models that combine recruitment of students from rural areas with a full four-year medical school curriculum and primary care residencies in rural locations have been shown to be successful in facilitating practice in rural areas. For rural health care needs to be met, geographic locations must also be addressed. Research consistently demonstrates that "physicians who have been reared in rural locations or who have received a portion of their medical education or postgraduate medical education in rural areas...have a substantially greater-than-average propensity to set up practices in rural areas." (p. 540)[7]

Pre-selection of students for primary care and potential rural practice involves interventions long before medical students and residents choose specialties and practice locations. Since fewer rural students go to college, the pool of students from which to draw medical students is disproportionately small for the rural population. One of the major reasons is that proportionately fewer rural students finish high school, with dropout rates for students in small and rural schools far exceeding national averages.[8]

Although students from rural areas are much more likely to return to rural areas to practice, these students from rural communities are underrepresented in medical schools.[9] As a result, recruitment of future rural practitioners must include efforts to attract, identify, and support rural high school students for medical careers.

We must support initiatives that identify and support the disadvantaged and rural student. In the same manner that we have responsibility for maintaining the education of the physician through continuing education, we have a responsibility for supporting the future physician through proactive educational support. Additional efforts directed at factors that increase the likelihood of students choosing primary and/or rural care are critical.

A 15-year study in Texas in which the Baylor College of Medicine and a local independent school district created a high school for health professions suggests that active encouragement at the high school level can strongly encourage students to pursue health professions. The importance of counseling services and financial barriers were also highlighted in the study. Although the program was developed in an urban area to address urban problems, it strongly suggests that concerted efforts to foster the pursuit of medical careers among a particular population is feasible, but must be initiated at pre-college levels.[10]

Baylor College of Medicine has also instituted a statewide program targeting minority students at elementary through postgraduate levels. Although long-term data are not available, the program seems to be successful in improving the quality of science education, ensuring educational opportunities and encouraging interest in science and medicine as careers. Models such as those instituted by Baylor need to be explored for their potential to improve access to medical careers for students from diverse backgrounds who may be more likely to practice in underserved areas.[11]

In New York City, the Gateway to Higher Education program also targets minority students, recruiting disadvantaged junior high students who show motivational and academic potential for an intensive math and science high school program. Its goal is to foster students' interest and pursuit of further education and careers in math, science, medicine, and technology. As with other programs, the importance of early intervention and counseling has been highlighted.[12]

At the University of North Dakota, a program has been developed to recruit and educate Native American medical students. The Indians into Medicine (INMED) program has been successful both in recruitment of an ethnic minority group in a rural State, but also in identifying specific obstacles to completion of medical training by these students.[13]

Medical schools have a crucial role in issues related to the preparation and selection of students--the Nation's future physicians. The inherent criteria of the selection process are too often biased against students from disadvantaged backgrounds, including rural students. The rural high school that does not support a quality science training program will have few students entering medicine or the other health careers. The lack of adequate training is frequently compounded by inadequate health career counseling.

Since the rural population relies heavily on primary care to meet its health care needs, many--but not all--of the factors that that specialty choice will also influence the supply of rural providers. Rezler and Kalishman identified several factors associated with students' lasting commitments to rural and family practice:

1. Come from small town or rural background
2. Are over the age of 25 years and are preferably married
3. Attended a public college
4. Have a strong motivation for direct, nurturant patient contact as evidenced by 1) service-related work experience or volunteer work, 2) dissatisfaction with object-oriented work, and 3) leisure activities involving other people
5. Exhibit a presence of humanistic over scientific interests as evidenced by books read, hobbies, community involvement, and extracurricular activities in college (654-655).

They call for consideration of these factors at the point of admissions to medical school.[14]

Medical Students

Societal changes are reflected in changes among medical students, residents, and practitioners. At all levels, future and practicing physicians reflect significant changes in values, lifestyle and career expectations, and organization of practice.

The type of student applying to and being accepted into medical school has changed. The number of individuals accepted into medical school has been rising only slightly since 1960, with the number of applicants peaking in 1975.

One of the most notable trends has been the increase in the number of women applying to and matriculating from medical school over the past three decades. The number of women applicants and matriculants remain less than the number of men, increasing from 1960-1985, and then leveling off.[15] The percentage of female medical school matriculants remains less than 40 percent, and the percentage of women graduates was 33.4 percent in 1990 (p. 12).[16]

The full implications of the increased numbers and percentages of women physicians remain to be seen, but several practice differences have already been observed. Male and female physicians practice a comparable number of weeks per year (mean of 47.6 versus 47.5 for male physicians). Female physicians are more likely to be employees, spend fewer hours per week on medical and administrative tasks (mean of 52.6 versus 58.2 for all male physicians) regardless of specialty, see fewer patients per week (male physicians see 21 percent more, i.e., a mean of 120.3 visits versus a mean of 99.3 visits for female physicians). Although women physicians are more likely than male physicians to practice in low-income areas, they tend to locate in large cities or metropolitan areas.[17]

There are also differences in choice of specialty between male and female physicians. Although there do not seem to be gender differences in choice of primary care specialties versus high technology specialties,[18] the type of primary care chosen does seem to differ. National data suggest that women are more likely than men to choose pediatrics and psychiatry, and about equally likely to choose internal medicine.[19,20] Since female physicians generally work fewer hours, have smaller patient loads and see fewer patients, any study of physician distribution must take into account the gender of physicians being trained and in practice.[21]

Specialization

For many physicians, specialty choices are made during medical school. In making specialty choices, medical students consider, in order of priority: time for family and personal life, professional autonomy, income potential, risk of malpractice, and the risk of AIDS.[22]

A review of the results of the Graduate Medical Education National Advisory Council (GMENAC) report reveals that shortages were projected in only four medical specialties by the year 1990, including Child Psychiatry, General Psychiatry, Emergency Medicine, and Preventive Medicine.[23] Although some progress has been made in the area of psychiatry, the other fields are understaffed at the present time. Some specialties such as Family Practice, General Internal Medicine, and Pediatrics were originally projected to be near balance. In fact, a shortage exists for the primary care fields of medicine. For the majority of medical and surgical subspecialties, a surplus is projected physician supply in the "ologies." The surplus of providers seems to have occured in these fields. Furthermore, the greater demand among the various specialties are in the "lifestyle specialties" where fixed income, hours, and practice problems predominate. Examples include such fields as anesthesiology, radiology, and emergency medicine.

The major problem with a surplus of "ologists" is that they are not well prepared to provide primary care services in rural areas. For example, a pulmonologist, an endocrinologist, or a cardiologist are ill-equipped to provide certain services basic to health care delivery in rural America--such as delivering babies or providing general pediatric care. A national supply of two pulmonologists for every one that is needed does not resolve the health manpower problems indigenous to rural America.

Residents

Overall changes in expectations for practice are reflected at both the medical student and resident levels. At the medical student level, changes in the types of applicants and specialty choices are clear. At the level of residents, issues related to subspecialization and the type and locus of practice predominate.

Studies consistently have shown that physicians tend to establish their first practice in locations geographically close to their residency sites.[24] For example, a study of medical students in Australia suggests that educational and training factors may be the most important influencing choice of location for postgraduate training, while professional, community, and family considerations combine to account for much of students' ultimate practice site choices.[25]

There are altered expectations on the part of young physicians who are now completing their training and looking at practice opportunities. The younger physicians do not want to be on-call every third night and every third weekend, and work 80 hours per week. As a result they are accepting opportunities at lower salaries in fixed situations. More and more physicians are opting for group practice and employee status.[26] The growth of group practices, however, has largely been an urban phenomenon. Rural communities offering predominately solo practices are therefore at a clear disadvantage in the recruitment of physicians. New arrangements that allow flexible models of group practice, partnerships, and multi-specialty practices must be explored to enhance the attractiveness of rural practice.

Although physicians generally prefer permanent practice locations, recruitment and retention are effected to varying degrees by such factors as geographic origin, location of residency training, spouse, personal and professional needs, special considerations such as NHSC obligations, specialty training, and long-term goals.

Debt Load

Although many have speculated that the sharply escalating costs of medical education over the past 15 years would greatly influence specialty choice, little formal research has been done on the influence of medical school debt. It is unclear whether greatly increasing debt loads of graduating medical students and residents have been a major factor in steering medical students away from primary care into more economically rewarding specialties and subspecialties.

In a study of alumni of a private, midwestern medical school who graduated between 1975 and 1989, physicians did not perceive indebtedness as a major factor in their choice of specialty. In addition, the authors note that type of debt and anticipated versus actual debt are important, but often overlooked, factors in an analysis of the impact of indebtedness.[27] The study is one of the few formal analyses of the impact of student debt. Additional studies are needed to assess correlations between debt and actual choice of specialty, not merely graduates' perceptions of the influence of debt. Graduates may underestimate the impact of indebtedness.

To address issues of indebtedness and loan repayment, many health policy analysts are recommending a revitalization of the National Health Service Corps, at Federal and/or State levels. The cornerstone of this program, demonstrably successful in the 1970's and early 1980's in improving availability of providers in underserved areas, is the scholarship program whereby educational expenses are paid in exchange for service obligations.[28]

However, with the decline of the NHSC, many States have initiated programs to encourage primary care specialties and/or practice in underserved areas. For example, the Minnesota Rural Physician Associate Program for Medical Students (RPAP) combines rural experience during medical school with rural role models and stipends to encourage practicing in rural areas. The program has been running for 18 years, with general success in encouraging students to enter primary care and in improving the distribution of physicians in rural Minnesota counties.[29]

The Michigan Department of Public Health has initiated a student loan repayment program that will pay medical education loans up to $20,000 per year for physicians, nurse practitioners, and nurse midwives who agree to serve in parts of the State experiencing difficulty in finding health care providers. Those professionals signing up for the service will serve one year in a shortage area for each year of medical education debt paid by the State.[30]

Dual Career/Spouse Issues

For physicians, as well as for most of society, dual career families are becoming the norm. Both women physicians and men physicians exhibit these problems and must consider careers of spouses and shared child-rearing responsibilities. A study of medical students graduating in 1988 showed that 35 percent were married and another 10 percent were engaged to be married. "Of the spouses and spouses-to-be, 85.7 percent had earned bachelor's degrees, 53.7 percent had at least some graduate or professional schooling, and 23.6 percent had earned a doctorate by the time of the medical students's graduation" (p. 594). A total of 78.3 percent were in professions or business.[31] The support physicians and their spouses offer each other in their careers is central to their marital satisfaction. A study of marital satisfaction among young physicians revealed only two variables to be positively associated with marital adjustment: perceived support from one's spouse for one's career, and perceived support by the physician for his or her spouse's career.[32]

Research also suggests that structures of marital and parental family structures are strongly correlated with differences in values that shape professional practice choices; cause and effect, however, is difficult to determine. Relationships between family structure and specialty choice are less clear.[33] Since almost half of all graduating medical students are married or engaged to be married by the time of graduation from medical school,[34] the personal and professional needs of spouses cannot be underestimated. These needs complicate and frequently limit physicians' choices for practice location, and must be considered in recruitment efforts. For example, many physicians are marrying professional spouses who require appropriate employment. It is difficult for a Ph.D. in economics to find a job in many sections of rural America.

Practice Issues

Personal issues of importance are closely related to practice issues. As more physicians are becoming employees, benefits take on increasing importance.[35] Physicians often value benefits such as medical insurance, leave of absence for illness, professional affiliation, and opportunities for continuing education. Other practice considerations in the recruitment of physicians include: working hours, salary, benefits, on-call schedule, continuing medical education, vacation, and the opportunity to work with an established group.

The medical facility takes on increased importance with the increased complexity and interrelatedness of health care. A practitioner will consider available consultants, laboratory facilities, proximity to major medical centers, hospital(s), extended care services, public health, and opportunities and relationships with group practice.

Community considerations may include geographic location, climate, recreational opportunities, church, spouse employment, and educational facilities. The size of the practice community is especially important, with a strong positive correlation between community size and relative supply of physicians.[36]

It must be noted that one of the most important changes in health care in recent years is that it is no longer an isolated activity practiced by the solo doctor of yesteryear. Today, health care is a complicated enterprise practiced by a team. The delivery of high-quality services requires the availability of many health professionals who can provide many sets of services in many different settings.[37] Concomitant with the Nation's failure to meet physician supply needs in rural America, is the failure to train ancillary health professionals for rural practice.

Other Issues

Many health policy analysts initially looked to the new Medicare Resource Based Relative Value Scales (RBRVS) adopted by Congress in 1989 as a remedy for rural and urban inequities in reimbursement. In general, RBRVS has not corrected inequities between rural and urban areas nor between various types of specialties.[38] Furthermore, it is not anticipated as the panacea for righting the rural reimbursement problem.

Managed Care Systems

Even when physicians choose a primary care specialty, rural areas do not always benefit. The issues of specialty choice and practice location are not identical. The physician supply question is further compounded with changes in the health care system. Specifically, there has been a substantial rise in the formation of prepaid health systems (i.e., health maintenance organizations). The HMO's recognize that one of the major ways for containing costs is to utilize primary care providers as "gatekeepers." The growth of the gatekeeper model in urban areas has resulted in increasing numbers of primary care physicians locating in those areas.

Various forms of managed care have been tried in rural areas, but they are primarily satellites of urban organizations. This model of care addresses some of the difficulties of isolated solo practice in rural areas but carries its own limitations. There is little community control. In fact, physicians may find conflicts of interest between the demands of their urban employers and the needs of their rural communities. In addition, urban-based satellite models support urban rather than rural community hospitals, undermining the strength of community-based care.[39]

Liability/Insurance Situation

Some analysts also point to the impact of the legal profession on physician supply, distribution, and practice. Many physicians are practicing defensive medicine, narrowing their scope of practice when a increased scope is needed, particularly in underserved areas. The marked trend of increasing liability premiums for all physicians has a unique and double impact on family practice physicians and the communities they serve. With a generally lower income, liability costs are a greater burden.[40] In addition, the dramatic rise in premium and liability risks for obstetrical practice has resulted in significant decreases in the percentage of family practice physicians who include obstetric services in their practice.[41]

Solutions

Increasingly, the medical education community has been taking a closer look at its role in educating students to meet societal needs. Schroeder and associates note that the public has entrusted academic medicine with the mission of preparing practitioners to meet societal medical needs. The public makes this trust explicit by generously funding medical education and by allowing the profession to regulate itself.[42]

Training in medical school is an obvious yet complex focus for criticism. There is a growing bias toward using the academic medical center as the locus of medical education. The reasons for this are varied and institutionalized. The academic medical center increasingly relies on practice dollars to sustain itself.[43] The growth of medical technology often leads to a segmented approach. Thus, medical students have limited exposure to primary care during medical school. Institutional commitment to primary care affects opportunities for student contact with primary care. Student contact with specialties seems to be a major factor in determining choice of residency.[44,45]

The training issue is the crux of the problem and is part of another phenomenon, the retrenchment of the academic medical center as the nucleus of medical education in America. We appear to be returning to an educational bias toward the medical center as the pre-eminent source of medical education after several decades that allowed diversity and flexibility within the education system.

Such a trend is disturbing and represents a shift toward a myopia of self-preservation of the academic medical center for the sake of the institution--not for the sake of medical education. The self-contained, usually urban, academic medical center is attempting to become the "citadel" of education and training and, more importantly, referrals. The increased reliance upon practice dollars to sustain the academic medical center seems to be the driving force behind the retrenchment of "the University" as the referral point of tertiary care. The levers of medical education at all levels appear to be pulling in the direction of modified rules for membership in the club, rules that reflect an understanding of the medical center and its needs.

The tertiary and now quaternary academic medical center possesses a unique and crucial role in the health care delivery and educational system. Allowance for diversity and flexibility, however, must not be dismantled in an effort to sustain such centers. Not all medical education centers should be full-fledged academic medical centers. In fact, not all academic medical centers should be quaternary centers. In the same manner, not everyone should be involved in rural health or perhaps even primary care. Many medical schools are incapable and others are unwilling to respond to primary care needs. Lewis and Sheps in *The Sick Citadel* recognized the dilemma when they observed that:

> ...the academic medical center must give high priority in its teaching, research, and patient-care programs to the major health problems **of the population of its area** and to practice in the community.[46]

For those academic centers that ascribe to a community focus on primary care, flexibility and diversity are crucial to training physicians for rural areas. Furthermore, rural health initiatives will only be successsful when they focus on the community, primary care, and the service needs of the community.

Integration of Local Services

A second element of the training issue is the undue emphasis on a segmented rather than an integrated approach to medical education. The segmentation of the curriculum among the various disciplines results in an undue priority being placed on the training of "ologists" rather than primary care providers. Several models of rural medical practice have demonstrated the feasibility and potential for success in integration of community-based medical services. For example, in Hettinger, North Dakota, a successful primary care clinic was begun almost three decades ago starting with a family practice physician partnership, and expanding into a group practice of "seven family physicians, two internists, a pediatrician, a general surgeon, two radiologists, three nurse practitioners, and two physician's assistants" (p. S35). Their geographic sphere has also expanded to provide primary care via aircraft for eight additional communities in North Dakota, South Dakota, and Montana. Other successful models have been developed in Minneola, Kansas, and rural Western New York State. Each of these model points to the importance of community involvement, the potential for using models of integrated rural care to encourage residents to practice primary care in rural areas, and the necessity of integrating services when developing viable models of community-based care.[47]

We need a new response. We need to:

- Move beyond a strict educational agenda to become more responsible for the needs of society. To accomplish such a goal, we need to get outside the confines of the citadel and actively reach out to our base communities.

- Adopt a broad perspective that recognizes the complexity and interrelatedness of rural health and the economic, social, and cultural context of the community.

- Develop a symbiotic relationship with underserved communities that recognizes their needs for active assistance in solving problems.

- Facilitate a leadership and thought process within the medical school and university that allows for diversity and flexibility. Our current educational structure is too linear and does not allow new strategies to be explored and developed.

Potential solutions and specific programs that could be initiated to increase the responsiveness by the academic medical center toward the needs of rural and underserved people include the following:

1. We need to ensure that an adequate cadre of "potential" rural practitioners is selected by the Nation's medical schools. A special emphasis on a proactive admission process for rural students will help us to meet future rural physician manpower needs. Head and Harris concluded that: "students intending to practice in and those raised in rural area are under represented."[48] We also need to provide special support programs at the undergraduate level that assists the rural and disadvantaged student prior to their application to medical school. We need to examine models that encourage students at high school or lower levels to enter careers in medicine. We cannot expect to increase the number of rural physicians without substantially increasing the number of medical students who come from rural areas. Socialization for careers begins in childhood and must be addressed seriously if we are to meet the health care needs of the rural population.

2. We must reverse the current student attitude toward primary care. Although the attitude of students is a complex issue, as the role models, academic medical centers have a central responsibility for addressing the issue. Kindig cites evidence for a declining positive attitude toward primary care based on responses to the annual AAMC senior student questionnaire.[49] The student preferences for primary care decreased from 36 percent in 1982 to 25 percent in 1988, a 32 percent decline over the six-year period. The diminishing interest was more prominent for general internal medicine (-43 percent) than for family practice (-28 percent). Special initiatives to decrease the negative impact of subspecialty training must be implemented if we are to be successful in training primary care physicians for the future.

3. We must respond to new graduate and undergraduate requirements that decrease the degree of acceptable flexibility within the curricula. Innovation and creativity in responding to the rural health problem will come from local efforts, not from centrally designed standard.

4. We must recognize that four years of socialization cannot be reversed with a single, isolated clinical rotation late in the fourth year of medical school. Longitudinal experiences at designated rural sites must be integrated into the curriculum of medical schools if an effective educational experience in rural health is to be provided to medical students. It is not only inefficient but inappropriate to train future rural physicians in tertiary referral centers, where little emphasis is placed on the type and level of services to be provided by primary care physicians. A new model that incorporates the rural site as the primary training center is of crucial importance if we are to be successful.

5. We need to facilitate cross-disciplinary training of health professionals. It seems clear that the practice of medicine is a team process. Yet, our approach to training and education related to maintaining such a team is dysfunctional.

6. We should continue to explore the use of computer modeling in education. The appropriate use of the computer will allow us to cross the geographic boundaries of the university and increase the ability to provide quality educational experiences in more rural areas. The computer which is transportable can become the rural educator's best potential tool.

7. In a similar fashion we need to explore and expand telecommunications linkages. The Texas Tech MEDNET project and other similar efforts should be expanded to allow for greater experimentation in the training of health science students in rural areas. By tying together the resources of the academic medical center with those of the rural community into a unified educational network, we can create a quality educational system for remote areas and a support base for the practicing physician. Such efforts can only be initiated by the academic medical center.

8. We need to understand that social responsibility implies more than education and research. It also implies an important role by the medical center in providing support and technical assistance to rural communities in need of viable, local, quality health care services. Colleges of medicine must work with local rural providers in underserved areas to improve access to the full range of quality health care.

9. We must recognize that, despite our best efforts, there are some rural and underserved areas of the Nation that will continue to have marked manpower shortage problems. To meet their needs is not purely an educational issue. It requires programs like the National Health Service Corps, which can provide a cadre of committed physicians for practice in rural and other underserved communities.

10. On the larger political horizon, individual offices of rural health are needed at the State level, combining non-clinical services such as education and research with clinical service. Such structures offer unique opportunities for provision of integrated and comprehensive approaches to health care needs.

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The Need for an Expanded Research Capacity in Primary Care[*]

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The Domain of Primary Care

An argument for building a research capacity in primary care begins with a definition of the discipline. Primary care has been defined in several ways. One is by its attributes: primary care is comprehensive, coordinated, continual, accessible, and accountable (1). Another is to call it the care given by clinicians in certain specialties. Family and general practice, general internal medicine, and pediatrics are always included, but the definition is sometimes extended to obstetrics/gynecology, psychiatry and to the subspecialties of internal medicine. Dentists and nurses are a special case. Most spend their time outside of primary medical care but the activities of some are squarely within the discipline. Another definition of primary care is by its place in a tiered system. By this definition, primary care clinicians are the patients' point of first contact and decide whether to refer patients to more specialized care.

Whatever the definition, primary care is distinct from more specialized care--in the patients' problems, clinical questions, scope, and guiding principles. It is not, as some would have it, just a derivative of more specialized care, applied to simpler problems.

The prototype of primary care is distinct, but the boundaries are blurred in this country. For the Nation as a whole, the roles have not been formalized and restricted, as they have in some countries, such as England, where all people have a family physician and can see a consultant or enter a hospital only by referral. There are subsystems within the United States where primary care is formalized: the "gatekeepers" in prepaid health care plans are primary care physicians who are responsible for deciding which other services patients can receive. However, most U.S. patients do not receive care in such structured settings and are in principle free to choose any physicians and services they want.

The Importance of Primary Care

Primary care is a large and important part of the health care system, from several perspectives. First, primary care physicians make up a large proportion of the Nation's physicians (Figure 1). Family/general practitioners, general internists, and pediatricians together made up 207,328 of 551,985 active physicians in 1989 (2). If one includes subspecialists of internal medicine and psychiatrists, many of whom spend part of their time in primary care, the proportion is 272,022 of 551, 985 (49

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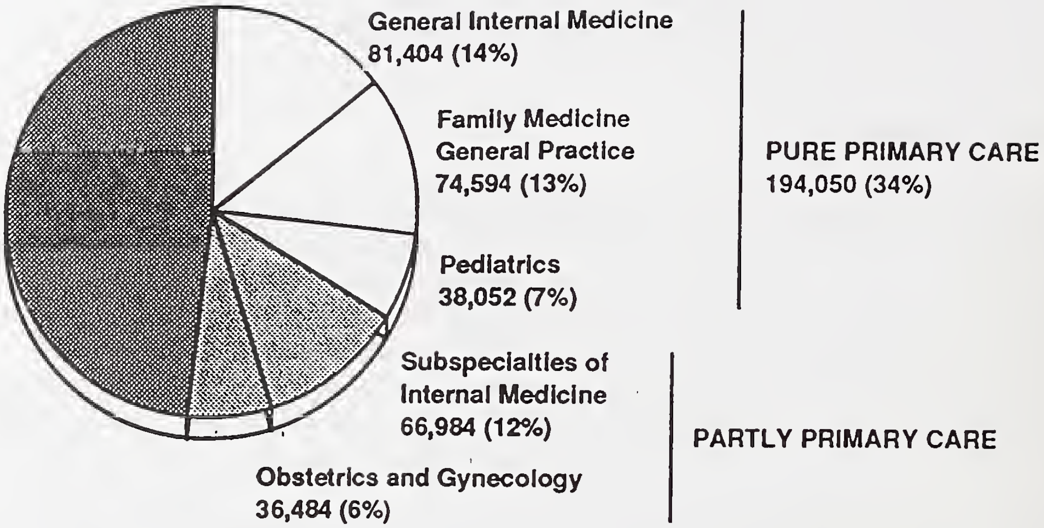
[*]This paper is based on work done by the author for The Task Force on Building Capacity in Primary Care Research



Primary Care Manpower for the 560,000 Active U.S. Physicians in 1989.
(DHHS, Bureau of Health Professions, Pub#HRS-P-OD--90-1. March 1990)

Figure 1. Primary Care Manpower for the 560,000 Active U.S. Physicians in 1989. (ref)

percent). Other health professionals--dentists, nurses, physicians assistants, etc.--are also part of primary care manpower.

These figures represent U.S. health manpower as it is now and not, perhaps, as it should be. In other developed countries, primary care physicians make up a much larger proportion of the total than in the United States. For example, in England and Canada, there are about two generalists per specialist; in general, these countries have better health statistics at lower costs than the United States (3).

Second, primary care physicians see a large proportion of the Nation's total patient visits. Family and general physicians, general internists, and pediatricians account for 51 percent of all medical contacts (4); by a different method, in 1983, the estimate was 66 percent (5). In some successful health care plans in the United States, the ratio of generalist to specialists is also higher than for the country as a whole; for example, patients in Group Health Cooperative of Puget Sound visit primary care physicians more than twice as often as referral physicians (6).

Third, although many visits to primary care physicians are for common, self-limited illness, they are also for high stakes, the care of the major causes of morbidity, mortality, and loss of function. Preventive health care is predominantly in the offices of primary care physicians; they see patients who are relatively well and not just those refered because of illness. These clinicians are responsible for the prevention of infectious diseases (by immunizations) and cardiovascular diseases (by diet and drugs) as well as the secondary prevention, through tests and early treatment, of cancers (e.g., by mammographies). Primary care physicians are the main decision makers for day-to-day absences from work, a major determinant of the performance of the U.S. work force. Much of the care of patients with AIDS, dementia, and other chronic diseases is in the hands of primary care physicians. Decisions about the leading causes of disability--back pain and respiratory infections--are mainly in primary care offices. For example, 59 percent of patients with low back pain visit family physicians (7) and back pain is the second most common reason patients visit internists (8). Primary care physicians are often the point of first contact for dangerous conditions such as heart attacks, pneumonia, and stroke.

The total cost of medical care, for the Nation as a whole, depends largely on the decisions of primary care physicians. Some of the cost is for the care they themselves provide. More rests on their decisions to refer patients to more high-intensity, specialized settings. If they refer unnecessarily, resources are wasted, whereas if they refer too late, patients might suffer unnecessarily. Referral care is more expensive and does not necessarily get better results. In one study, children with asthma received more complex and costly medical regimens from allergists than from generalists, even though there was no evidence that these children were sicker or that the more intense care got better results (9). Finally, primary care physicians are a pivotal part of recent efforts to control the costs of medical care through managed health care.

About four-fifths of all health care expenditures are determined by the decisions of physicians, and can rise or fall in relation to patterns of decision making that primary care physicians make in the face of substantial uncertainty. For example, low back pain is a common complaint in adults and primary care physicians are often the point of first contact with the medical care system. They may manage most cases with good results by bed rest at home, pain medications, muscle relaxants, and exercises. On the other hand, they might refer patients with low back pain to highly specialized physicians such as orthopedic surgeons or neurologists, who more commonly rely on spine x-rays and MRI scans for more precise diagnosis and surgery or injections for treatment. The difference in cost is enormous. If the decision to refer is because the more specialized and expensive care is more effective for such patients, the money is well spent; however, if the outcome is not improved, then small shifts in patterns of referral decisions can have large economic consequences.

Finally, primary care physicians are more involved than other physicians in meeting the medical needs of the socially disadvantaged. This includes providing medical care for both urban and rural underserved populations as well as the homeless.

Thus, viewed from many perspectives, a great deal of the Nation's health care, and the costs of care, depends on the decisions of primary care physicians. For this reason, it is important that those decisions are guided by the best possible information base, scientific research.

Is Present Research Adequate for Primary Care?

The United States has developed a large, complex biomedical research establishment, the strongest in the world. Nearly half of the national support for health research and development comes from industry and most of the rest from the Federal Government (10). Most Federal research funding is concentrated in the National Institutes of Health (NIH). Other major funding agencies for clinical research include the Agency for Health Care Policy and Research (AHCPR), Centers for Disease Control, foundations, and private industry. Of these, only AHCPR and some foundations have primary care research as a high priority. The NIH is broad and complex, including 13 institutes, hundreds of programs and thousands of grants. The Nation has invested heavily to build and maintain this research enterprise; the current NIH budget is $8.3 billion. One might ask: is the output of the present research not sufficient for *all* of medicine, including primary care?

Primary care does benefit from the present investment in biomedical research. However, the benefit is not as great as is commonly assumed because most of the research is not directly intended to guide primary care and can be only poorly adapted to it. Clinical research funded by the NIH is for the most part an unreliable guide to clinical decision making in primary care, even though it may be scientifically valid for its own purposes.

The characteristics of clinical research is determined by who does it and where it is done. Most medical researchers are presently highly specialized physicians or, increasingly, PhD's who are trained to do research in laboratories on referred patients, animal models, or subcellular systems. They work in referral centers many steps removed from patients in office practice, much less those in the community.

The results of existing research often cannot be generalized to primary care practice for several reasons (11):

The questions are different. Mainstream biomedical research starts from the assumption that disease is mainly biologic and emphasizes studies of the mechanisms of disease, often at the cellular or molecular level. Its parent disciplines are often biochemistry, immunology, physics, and their derivatives. Primary care physicians, on the other hand, mainly depend on research to guide them in practical decisions about the diagnosis, treatment and prevention of disease, and they more often depend on disciplines such as epidemiology, statistics, and the social sciences for finding answers.

The diseases are different. Most current research concerns specific diseases such as coronary atherosclerosis, breast cancer, or rheumatoid arthritis. Primary care physicians, on the other hand, usually deal with patients with problems such as abdominal pain, fatigue, nausea, or weight loss, the causes of which have not yet been well defined. They also manage patients with multiple illnesses that have many interacting causes and effects.

The patients are different. It is usual practice in clinical research to restrict the characteristics of the patients studied in order to have a more homogeneous sample and hence get a more scientifically credible result. Thus, patients in clinical research are selected to have a single, well-defined disease, follow medical advice and are neither old nor young. Patients in actual practice, in contrast, usually have more than one disease, often do not comply with medical advice, and are of all ages. Literally hundreds of patients may be excluded from studies for every one that is included. As a result, the patients in most clinical research are quite unlike those typically seen in practice, and the results of the research cannot be safely generalized to primary care.

The interventions are different. Most clinical trials are studies of the effects of a single new drug, surgical procedure or device. Primary care physicians, however, commonly rely on other kinds of interventions--for example, psychotherapy, diet, and exercise--to help patients. Also, they tend to use multiple approaches to illness management simultaneously such as medication and diet--and explicitly acknowledge the human dimensions of the doctor-patient encounter as part of the treatment.

The outcomes are different. Biomedical research as it usually is practiced pays most attention to "hard" outcomes of care, such as death and disease status, while patients value and primary care physicians often strive for relief of suffering, prevention of disease, and restoration of function (12). Better ways to measure quality of life are being developed but are not now commonly used (13).

Although many studies sponsored by the NIH and published in major medical journals seem to meet the needs of primary care, the suitability is sometimes more apparent than real. A case in point is an influential study of prevention. The Lipids Research

Clinics (LRC) Trial was intended to establish whether lowering serum cholesterol could prevent coronary artery disease, and has become widely used as a basis for preventive care (14). It showed decisively that lowering serum cholesterol prevented heart attacks. However, LRC enrolled fewer than one in 100 eligible people, and restricted participants to well educated men between ages 35 and 69 with unusually high cholesterol levels and without other major diseases or long-term medications. An expensive drug with unpleasant side effects was used. The researchers made unusual efforts to assure that the patients took their medications. The main outcome of the study, reduction in the incidence of coronary disease and death, was only a partial triumph because the overall death rates were not changed. In all, the LRC Trial was an excellent example of clinical research for its intended purposes but of quite limited value as a guide to primary care.

Thus, the biomedical research produced by the Nation's present systems often is not useful in the day-to-day practice of primary care either because it was never intended for it or because it does not include the questions, diseases, patients, interventions or outcomes that most patients and their primary care physicians wrestle with daily.

What is Needed

To have a strong research capacity for primary care, several elements are needed. At the present time, many are already in place, but others must be developed.

Important Questions. Important questions might be defined as those that concern frequent causes of morbidity, mortality, or disability in the population; for which there is substantial uncertainty about the best form of care; and for which financial costs are high. Anyone who has seen patients in primary care knows that literally hundreds of such questions arise in the course of a single day.

The problems encountered in primary care must also be amenable to scientific inquiry. Patients in primary care typically have multiple, interacting causes and effects of disease, many of which (e.g., pain, nausea, fatigue) are not physically verifiable, as are phenomena in the laboratory. Patients are free to refuse to cooperate and they live in a complex physical and social environment that cannot be controlled for the purposes of study. Other biomedical scientists, used to the control and precision of the laboratory, question whether studies can be done well under these conditions, or even whether scientific research is possible at all. However, there are enough examples of excellent primary care research, published in leading journals, to establish that the work can be done well. This work rests on modern developments in research methods--for example, epidemiologic research designs, mathematical modeling, measurement theory, and quantitative decision making.

Excellent Researchers. Can primary care attract scholars with the ability and persistence to learn to be first-class researchers? Clearly it can. For example, the Robert Wood Johnson Clinical Scholars Program admits 20 physicians per year, most of whom are in primary care (15). The program must turn away many well qualified applicants. Other fellowship programs for generalists, mostly funded by foundations, have also attracted excellent applicants.

It is also clear that these researchers-in-training need to learn basic skills in research design, measurement, and analysis, as it applies to primary care, followed by a period in which they consolidate these skills by doing research under the guidance of an experienced mentor (16). This training takes at least one-two years and more often several years to produce an independent researcher, as it does in the other medical sciences.

There is presently a major shortfall in opportunities for fellows to learn to be researchers. Although there are a number of primary care fellowships, few of them are research fellowships, and even fewer offer the full resources needed: methods courses, seasoned mentors, protected time for research, and enough years to finish the job. The present output of primary care researchers is far less than one per primary care department per year and well qualified graduates are heavily recruited.

Funding for Research. At the present time, there is no coherent plan for funding primary care research, as there is for funding research in specific diseases. There are at least four problems. First, the only Federal agency where applications for primary care research grants are explicitly encouraged is the Agency for Health Care Policy and Research; however, it has a relative pool of funds, only about one sixtieth of the NIH. Second, it is ambiguous where primary care grants should be submitted to the NIH. For example, a grant about the medical problem headache might be sent to the Institute for Allergy and Infectious Diseases; Arthritis, Musculoskeletal and Skin Diseases; Cancer; Dental Research, Eye or Neurological Disorders and Stroke because among the causes of headache are allergic and infectious sinusitis, temporomandibular joint disease, nasopharyngeal cancer, dental pulpitis, glaucoma and brain tumors. Third, to appeal to one or another of the existing agencies, the purpose of the grant must be distorted. For example, a grant about smoking cessation might need to be oriented to the prevention of chronic lung disease or, alternatively, cardiovascular disease when in fact smoking cessation would accomplish these and much more. Finally, the scholars who set the research agendas and decide on grant awards have other interests, and it may be difficult for primary care researchers to convince them of the importance of their questions or the rigor of their methods.

For these reasons, fine projects in primary care go unfunded and the total number submitted may be depressed because of difficulties identifying where to apply, the need to adapt research proposals to the particular interests of existing agencies, and the low funding levels.

New Research Disciplines

The main paradigm for primary care research is similar to other research involving scientific study of intact humans. It involves issues such as representative sampling from larger populations, reliable and valid measurements, comparing like with like, assessing the role of chance in observed effects. This is the kind of research that can be used to answer many clinical questions in primary care, as it is for clinical questions in secondary and tertiary care.

Beyond that, the practice of primary care can benefit from studies that are not as quantitative, such as in ethics, anthropology, economics, and law (Figure 2).

Primary care researchers have been leaders in introducing new approaches to clinical research, borrowed from other disciplines and adapted to the special needs of clinical medicine. Some of these are summarized in Table 1. Many of these new fields are especially helpful in dealing with vexing modern dilemmas at the interface between social problems and clinical medicine. It is remarkable how much has already been accomplished in these fields with so few financial resources and so little official encouragement.

Secondary Effects of Research Capacity

It is tempting to give research in primary care a low priority for attention and funding. Is it not mainly the concern of a few academic generalists. There are, after all, more pressing problems such as unmet medical care needs, the rising cost of medical care, and the growing shortage of primary care manpower. However, the strength of primary care research affects all other aspects of the discipline.

The main purpose for building research capacity in primary care is to produce better research to guide clinical decision making. However, there are other, less direct, benefits as well. The number of students entering primary care has been declining in recent years, a trend which, if it continues, will lead to serious imbalances in the Nation's medical manpower. A stronger research capacity for primary care is an important element in the attractiveness of the field. The researchers, who are for the most part on medical school faculties, may improve the clarity and effectiveness of their teaching and patient care. Through their successes in research, in settings where research is highly valued, they may provide more attractive role models for students. The results of primary care research will provide a richer intellectual challenge for students.

Summary

Primary care physicians are a major part of the health care system, yet they are not armed with an information base appropriate for their needs. With it, they could make better decisions affecting the health of the American people and the costs of medical care. Stronger research capacity in primary care would also improve the attractiveness of the discipline, which is one factor in reversing the declining entry into primary care disciplines.

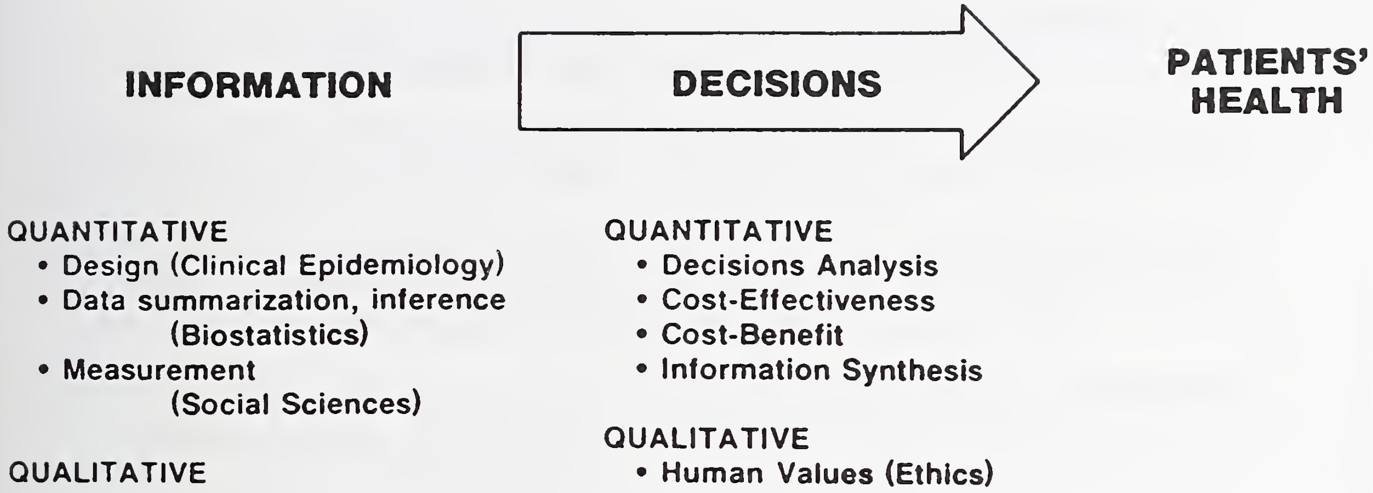

INFORMATION
DECISIONS
PATIENTS' HEALTH
QUANTITATIVE
• Design (Clinical Epidemiology)
• Data summarization, inference (Biostatistics)
• Measurement (Social Sciences)
QUALITATIVE
QUANTITATIVE
• Decisions Analysis
• Cost-Effectiveness
• Cost-Benefit
• Information Synthesis
QUALITATIVE
• Human Values (Ethics)

Figure 2. Research Skills for Primary Care. (16).

Table 1. New disciplines that have Strong Support in Primary Care Research

Disciplines	Research Questions
Cost-effectiveness Analysis	How much does it cost to achieve a given health outcome?
Outcomes Research	Which medical interventions achieve the best outcomes at the lowest cost?
Clinical Epidemiology	How can the one create or identify the best available information to guide clinical decisions?
Doctor-Patient	How can physicians increase the communication effectiveness and patient satisfaction with the medical encounter?
Prevention	How can disease be prevented or discovered at an early stage when it is curable?
Medical Decision Making	What series of decisions maximize patients' utilities?
Medical Education	How can education produce the kinds of doctors patients want and need?

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Assuring Access: Community Health Centers As a Community-Based Model of Coordinated Care

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Introduction

Almost 27 years ago, community health centers were initiated in the United States precisely to address the mandate reflected in the title of this paper. The evidence in more than 30 studies and reviews demonstrates definitively that--at least during the first 10 to 15 years of the growing national network of Community and Migrant Health Centers (C/MHC's)--the mandate was carried out with very high degrees of success. C/MHC's actively reached out to the populations and groups most at risk and least well served: the uninsured, minorities, inner-city and rural families trapped in poverty, burdened with the highest rates of morbidity and mortality and the least access to primary care, children and the elderly. They had impressive--sometimes spectacular--impact on health care utilization and health status. Their services were high in quality and relatively low in cost.

Although it is clear that the network of community and migrant health centers--now grown to nearly 600 centers, serving more than six million low-income people at more than 1,400 sites--continues to serve the same populations in need, evidence of health status impact, effectiveness and efficiency during the past decade is more sparse. To re-examine the mandate today, therefore, is to raise a series of questions:

Are C/MHC's doing the same things now--or doing them as thoroughly--as they did at the outset? Is their approach to communities, and their definition of community health care, the same? Have the most powerful determinants of the health of their populations--the social, biological, physical, economic and political environments--changed in ways that present new and formidable obstacles and problems? How has the long-standing and deepening crisis in the U.S. health care system affected them? What needs to be done to maintain and renew the fulfillment of the mandate?

To approach these questions, this paper will review the central organizing principles and approaches of the early community health centers; briefly review the measures of their success; examine the changes that occurred during the 1980's; offer a new view of the problem of access; and make some suggestions for the future.

The Health Center Model and Community-Oriented Primary Care

Five central principles characterized the first wave of community health centers funded by the Office of Economic Opportunity (OEO) in the mid-1960's:

1. Equity in access to health care through reduction or removal of the barriers of income, insurance status, geography and transportation, language and culture, and health manpower shortages, all of which had served as rationing devices;

2. Service to defined communities and populations, with priority to those in greatest relative need;

3. Partnership with communities through active participation by residents in health center management; the recruitment and training of residents as staff members for outreach, health education, community organization and development; and community participation in shaping and overseeing health center programs;

4. Multidisciplinary Family Health Care Teams expanding the medical model to include outreach, health education, social work, mental health, nutrition and environmental workers; and

5. Community-Oriented Primary Care involving the application of epidemiology to primary care in the definition of major community health problems, the planning of interventions, and the evaluation of health outcomes.

In sum, these principles represented the integration of clinical primary care and public health; the unifying objective was community health status, not that of individuals alone. The health center model drew directly from models developed by Kark and his colleagues in South Africa but added to them a unique emphasis on outreach and community involvement.[1] The first proposal of the health center concept to OEO, for example, included programs to improve "environmental, economic, and educational factors related to health" in its definition of comprehensive health services and added:

> "The need is not for the distribution of health services to passive recipients, but for the active involvement of local populations in ways which will change their knowledge, attitudes and motivation. The central focus is...community-based health improvement."[2]

Taken together, these principles comprised a new and enlarged definition of access. In traditional usage, "access to health care" typically referred to the ability of an individual patient to reach a health professional for the provision of personal medical services. In this new definition, "access" referred to the status of communities or populations as well as individuals; it defined health care to include a much broader spectrum of individual and community-oriented services and programs; and it meant access to participation, involvement and control of those programs. The innovation of community health centers was not merely to seek a level of utilization appropriate to the needs of high-risk, underserved populations; more importantly, it was to create a type of utilization appropriate to the needs, characteristics, and human resources of the communities they served. This approach was a major determinant of the network's success.

Impact and Effectiveness of the C/MHC Model

Most of the detailed descriptive and analytic studies of the performance, health status impact, and cost-effectiveness of C/MHC's were published in the late 1960's and in the 1970-1980 decade. Almost without exception, community health centers were found to be major contributors to equity of access to health care for the poor and minorities, and to enhance the use of primary care and preventive services by high-risk low-income populations, including children and the elderly.[3-12] Many studies demonstrated striking effectiveness in lowering perinatal and infant mortality rates, preventing rheumatic fever, and lowering cardiovascular mortality.[13-20]

At the same time, C/MHC's were found to achieve dramatic reductions--ranging from 20 to nearly 70 percent--in hospitalization rates and reductions of 13 to nearly 40 percent in the use of emergency rooms by their target populations.[21-29] In consequence of these and other achievements, the costs of health care for the populations using health centers were found to be significantly lower than for similar populations using private physicians, hospital outpatient departments, and emergency rooms as their primary sources of care.[30-35] Community health center populations showed the greatest gains in national clinical trials of hypertension control, and similar improvements were noted in such other preventive procedures as immunization, Pap smears and early and continuous prenatal care. Several studies provided assurance that C/MHC health services were of high quality.[36,37] A number of health centers, particularly in rural areas, launched major and highly effective programs in environmental improvement, housing, and community development.[38]

Research on C/MHC performance was much more limited in the 1980's, but the relatively few published studies continued to demonstrate the effectiveness of these programs in increasing access to health care and improving health status for low-income, minority and rural populations.[39-43] The available evidence suggests that health centers are continuing to reach and provide access to their target communities, to serve as an effective point of entry into the health care system, to promote ongoing and continuous care of high quality at relatively lower cost, and to improve health status.

A Decade of Change and Retrenchment

Despite this impressive record, community and migrant health centers were a specific target of both financial and programmatic retrenchment through much of the 1980's. A 14-percent reduction in overall direct health center funding for FY 1981 began the process. It was intensified by draconian cuts at both Federal and State levels in Medicaid eligibility, limitation of covered services, and funding, a major source of revenue for C/MHC's. These cuts not only threatened further progress in improving the health status of the poor and minorities primarily served by health centers, but markedly curtailed access to health care for all low-income populations.[44-47] They caused rapid and serious increases in morbidity and mortality among those cut off from care.[48] The number of health centers shrank significantly during the decade. At the same time, growing numbers of providers in the private sector refused to participate in Medicaid. The number of rural counties with no providers at all increased. The National Health Service Corps, an important source of health center professional staffing, was also cut severely.

Perhaps even more important than these limitations in funding was an ideological change in the Federal view of health center programs. Health centers were told to become more like private sector providers, to be "lean, mean and competitive"--though there was no evidence that others were competing to serve their target populations--to increase their productivity and to increase their reimbursements from Medicaid and other sources. National Health Service Corps physicians were steered toward independent private practice or small groups, modes of care that were ill-suited to the needs of populations suffering high rates of infant mortality, substance abuse, adolescent pregnancy, and violence.

Most affected by these changes were the services that were not reimbursable: outreach work, social work, health education, nutrition counseling, and program management and planning. Yet these were precisely the services that made health center programs comprehensive. They met the unique needs of target communities, they were important in improving access, and they gave health centers the depth of staff required for community-oriented primary care--carefull needs assessment, community involvement, planned interventions and evaluation.

In consequence, community health centers were pushed backwards toward a narrowly medical model and placed more in the role of medical shopkeepers, responsible only for those who walked through their doors. "Access" now meant the availability of a much more limited program. The health centers adapted--increasing their reimbursements and their clinical productivity--but to a very considerable extent they had reduced their community dimension and focus, or at least the capacity to implement it fully. It is no accident that a recent publication spoke of "transforming" a health center into a COPC program.[49]

It is important not to overstate the current situation. More than 98 percent of community health centers still provide some level of health education services. In recent years, many have been able to add categorical outreach workers, particularly for prenatal case finding and care, substance abuse and AIDS. Creative networking with schools, health departments and other public- and private-sector providers is in effect another kind of outreach, and C/MHC's have shown resilience and resourcefulness in finding new sources of local, State and Federal funding for targeted special purposes and programs. Community needs assessments and community participation in management are built into the very structure of the health center program. These are essential elements of a community-focused approach.

But during the same period of the 1980's, many health center communities were increasingly devastated by new health problems: epidemic substance abuse, AIDS, sexually transmitted disease, tuberculosis, violence and homicide, adolescent pregnancy, the chronic mentally ill, and the homeless. These in turn were the inevitable consequences of the disappearance of low-skill jobs and the redistribution of income and wealth from the poor and lower middle class to the wealthy, the defining economic and social characteristics of the decade. These are problems that require a broad array of services beyond the narrowly clinical services that are community-focused. A massive expansion of the C/MHC network--"Access 2000"--is proposed for this decade, and it is urgently needed, but increased numbers alone will not suffice.

Redefining Access

What is needed now to assure that C/MHC's become a "community-based model of coordinated care" on an expanded scale in this decade, increasing access to the full spectrum of services and planned interventions envisioned by the concept of community-oriented primary care? To begin to answer that question with some specificity, I suggest that we turn the "access problem"--usually defined, as I have noted, as the access of individuals to medical care--on its head, and ask a different set of questions. **What are the barriers that limit the access of community health centers to the communities they serve and impede the full implementation of community-oriented primary care? What must be done to overcome them?**

In no rank order, the barriers include the following:

1. **The pervasiveness of the medical model in the U.S. health care system.** The union of clinical primary care and public health/community health approaches is far from complete, and barely exists in institutionalized forms aside from the C/MHC network. In the larger health care system, health care is still largely provider-driven, not necessarily need-driven and certainly not often based on assessments of the needs of defined communities or populations. Among professional providers and communities alike, "health care" is most often perceived as "medical care"--personal curative medical services. For providers, this is most often the model presented by their professional training; for consumers and in particular for low-income high-risk communities, it is a definition based on past experience, the most urgent need, and perceptions of what the system provides to the wealthier. Together, these forces make expansion beyond the medical model more difficult.

2. **Lack of sufficient outreach personnel, especially generic family health workers and community health workers.** Breaking the barriers of access to communities by health centers will require a much higher ratio of outreach workers to professional staff than currently exists. There is probably a

"spillover" effect of categorical, program-specific outreach workers in increasing access generally, but that is not sufficient to reach the silent but sizeable minority of people in every low-income community who ultimately show up in emergency rooms--or tertiary-care beds--with ambulatory-care-sensitive conditions that should have been prevented by primary care intervention. Since there is no simple way to make outreach worker encounters reimbursable, grant funding for this pattern of staffing is needed.

3. **Problems in the recruitment and retention of physicians and other professional staff.** This is clearly the most urgent and difficult problem confronting C/MHC's. It has its roots in the decimation and changed direction of the National Health Service Corps; in the nature of medical education and residency training; in the growing collapse of medical student and resident interest in primary care careers, and in the difficult nature of work in multi-problem, high-risk, resource-poor communities. Shortages of professional staff exact a dual cost: the staff who remain are confined to a treadmill of clinical encounters, with no larger community health dimension, and overworked. Consumers endure frustrating delays, longer waits and briefer visits. The C/MHC network now employs approximately 2,500 physicians, 600 dentists, and 850 nurse-practitioners and physician assistants. A conservative estimate of the requirements of the proposed "Access 2000" expansion is a need for at least 10,000 **more** physicians and an equal number of paraprofessionals.

4. **Lack of knowledge of what works, and lack of the ability to make use of existing community-based data.** The paucity of research on community health center programs in the past decade has left us with limited knowledge of the effectiveness of interventions, especially with regard to non-clinical and outreach services. Which types of outreach work best, and for which problems? Who is reached by different approaches and different types of workers? What are the problems in the community, the "cases for action" that should have priority? Who is not being reached? In urban areas at least, the easy availability of relevant computerized data--census data, hospital discharge data and vital statistics--on a small-area basis (census tract, zip code, or health district) can provide both demographic and health utilization and status information that could vastly improve needs assessment by C/MHC's--if management were adequately staffed and equipped to obtain and analyze it.[50]

5. **The anomic nature of many low-income communities**. It is important to recognize low-income and inner-city communities as reservoirs of untapped human resources rather than (as media and mainstream cultures increasingly define them) as sinkholes of pathology. But the degree of social disintegration in many of these communities over the past decade is without precedent, and it poses real barriers to access. Responsiveness to most community-focused interventions requires a degree of social cohesion. The

problem is no longer limited to large urban areas; homelessness, substance abuse and violence are increasingly prevalent in smaller cities and towns and some rural areas.

6. **The inability of health centers to address root causes.** The substrates of illness and death in poor and minority communities are unemployment and underemployment; poor housing; schools that are underfunded, over-crowded and low in quality; racism and segregation; limited mobility; and dangerous physical environments. A number of health centers have fostered housing programs, and a few of the early health centers mounted comprehensive interventions in the environment, education and economic development, but health services alone are not likely to have a major impact on health status in these circumstances.[51] Health services are rarely the highest priority of such communities.

A Program for the 1990's

Health centers and their supporters will have to address these problems if the planned expansion of the C/MHC network is to realize its full potential in providing community-based models of coordinated care. An agenda for solutions in this decade should include the following:

1. **Greatly expanded budgets for outreach workers to achieve a minimum ratio of 3:1 over clinical personnel.** This would restore the real meaning of "community-based": much of the most important work of health centers is in the community, not in the clinical facility. "Outreach" means, in particular, health educators and community organizers, drawn from target communities and trained at the health center and cooperating institutions, working full-time in the community as case finders, followup visitors, educators and liaisons with such important community institutions as churches, schools, social clubs and fraternal institutions, and housing projects. Outreach and followup activities have a multiplier effect on the work of clinical personnel and are best able to target specific at-risk subgroups and increase the utilization of preventive and risk-reduction measures such as early prenatal care, hypertension control, immunization, mammography, Pap smears, and condom use.

   Since work of this sort is not likely to be reimbursable, outreach must be supported by specifically budgeted grant funds, well beyond the 20 percent of C/MHC expenditures now devoted to these activities. A 50-percent increase--to 30 percent of the total--is a reasonable short-term target. Such increases in health center budgets may substantially inflate the calculations of per-visit costs, but that is an unfair and inappropriate comparison. "Medical shopkeeper" providers--private physicians, outpatient departments, emergency rooms, and most health maintenance organizations--do not engage in community-based patient recruitment, case-finding and health education efforts, which lie outside the medical model of health care. Yet such efforts are the most likely to achieve risk reduction, increase effective primary care utilization, reduce hospitalization, and achieve major cost savings in the long run.

2. **Provide a designated staff position for research and evaluation at each urban health center.** "Lean" management usually excludes such positions; overworked management and clinical personnel have little time for serious evaluations. Yet without such a resource, health centers are unable to learn where targeted interventions are needed and what works best; "numerator" analyses based on health center users and services may have limited relevance to community needs. Equally important, the addition of this resource will enable urban health centers to obtain and make use of existing databases for small-area analysis, and shape their programs accordingly.

3. **Restore or increase environmental health services in both urban and rural centers.** This is an additional, and often overlooked, aspect of outreach, directly related to such rapidly increasing problems of hospitalization for asthma and trauma among children and the elderly.

4. **Develop short-term and long-term physician recruitment and retention strategies.** This is clearly the most urgent and difficult problem confronting C/MHC's, but obviously it cannot be solved by health centers alone and will require a combination of legislation, changes in the National Health Service Corps program, and cooperation with medical schools and residency programs.

   In the short term, there seem to be no alternatives to monetary incentives--increased salary levels and loan forgiveness programs to give health centers competitive advantages (or, at the least, equal footing) in recruitment. But money alone will not solve the problem. Physicians and other health professionals in C/MHC's are vulnerable to feeling that they are isolated and marginalized, working in low-prestige institutions and cut off from contact with high-technology, high-prestige tertiary care medicine and subspecialty resources. But there are untapped resources that might be enlisted in recruitment and retention efforts.

   (a) **Liaison with primary care specialty professional organizations.** The American College of Physicians, the American Academy of Family Practice, and the professional societies of pediatricians and obstetrician/gynecologists could contribute to solving the recruitment/retention problem by creating a category of special and real--not merely honorary--public service fellowships for graduating residents who choose to serve in inner cities and rural poverty areas. Such service could accrue special credit toward full fellowship status in those societies. More importantly, the societies could undertake to provide ongoing educational support: senior mentors for the fellows, assistance in conducting health services research and ambulatory care clinical studies in the health centers, and subsidized participation in annual meetings. Analogous support should be sought from professional dental, nursing and pharmacist organizations as their contribution to meeting the health care needs of deprived communities.

(b) **Liaison with medical schools, teaching hospitals and schools of public health.** A wealth of experience suggests that experience during training has a powerful effect on choices of practice location and type. The task here--consistent with other emerging trends in undergraduate and graduate medical education--is to give students and residents exposure outside the traditional tertiary-care teaching hospital. In this, health centers can play a major role. One existing model is the Community Medicine fellowship program operated jointly by National Medical Fellowships and the National Association of Community Health Centers to provide second-year and third-year minority medical students with elective clerkships in health centers; with help from foundations, this offer needs to be expanded to all students at all medical schools, and the list of participating health centers must be increased correspondingly. Similar cooperative arrangements should be made with family practice residency programs, especially since the Academy of Family Practice has required that all such programs must now provide formal training in community-oriented primary care as part of the postgraduate curriculum. Formal cooperative arrangements with schools of public health, particularly for student and faculty participation in COPC research and evaluation, would further enrich health center resources.

Community and migrant health centers, in fact, should be recognized (and must recognize themselves) as important professional teaching resources in current efforts to increase the training of primary care physicians and change the settings in which they learn.[52,53] To do so may be the best path to long-term improvement in recruitment and retention.

It is essential that such educational and training efforts be adequately and independently funded. Additional staff/faculty must be provided, with funding for part-time participation by regular health center staff professionals as well. These considerable costs should not be charged to health center budgets; they are the responsibility of the training institutions, which should probably provide modest overhead costs to health centers as well. Education of this sort is expensive and time-consuming. Without independent subsidization, it would only increase health center costs and lower productivity. Worse still, inadequately funded and organized programs would be counterproductive, providing bad health center experiences for staff and students alike.

There is ample precedent for such private and public subsidization of the costs of professional education in service institutions; it is built into the budgets of all teaching hospitals now and needs merely to be extended to free-standing ambulatory care programs. Another precedent, however, must be avoided: the old tradition of "charity care," in which the poor were required to trade their dignity--and their time--for their health care as "teaching material." All cooperative educational arrangements must be carefully negotiated and approved by the consumer-controlled health center boards, and all health center patients should have the right to opt out of student/resident encounters.

This four-point program for the 1990's will address some, though not all, of the barriers of access to communities by health centers in the effort to provide community-based models of care. Professional educational programs in health centers, with their broader community-oriented programs, will offer an alternative to the pervasive medical model and, in the long term, assist recruitment and retention efforts. A greatly expanded corps of outreach workers will increase contact with, and knowledge of, target communities. Educational liaisons and funding for research and evaluation personnel will increase knowledge of program effectiveness and increase the ability to make use of existing and relevant data from other sources.

Health Centers and the Social Contract

The other barriers to access--the anomie and social disorganization of many poverty-stricken communities, and the difficulty of addressing root causes--will not be overcome by the health center network alone. Their solution will require fundamental changes in our overall national social, economic, and racial policies, the set of understandings as to the responsibilities and limits of government that we call a social contract. We are only now beginning to recognize how radically the social contract was rewritten during the past decade: simultaneously limiting governmental and social responsibility, redistributing income and wealth upwards, and classifying the poor and those needing social assistance and intervention--the victims of inequity--as the causes of inequity. The consequences of those changes are all around us, in the thousand points of blight that affect every inner-city environment, and in the devastating biological and social epidemics that impair the physical and mental health status of poor communities.

Health care is an important part of the social contract, and of any national agenda for social justice, but health care alone is not the most important determinant of improved health status. We are unlikely to transform one part of the social contract in isolation from all the others, even a part as huge, as flawed and as important as health care, without confronting the need for broader social change. Implementing the proposed health center agenda for the 1990's will have, at best, a modest impact on health status. That is not an argument to postpone health care reform until larger social tasks are accomplished; on the contrary, we must try to use health care reform and health center expansion as an explicit and deliberate model for broader social change.[54]

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Strategies in Primary Care That Increase Patients' Involvement in Their Health Care

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The doctor-patient relationship, especially in primary care, is no longer a subject relegated to medical school humanists and consumer advocates who have been on the margin in policy debates. The doctor-patient relationship has moved into a center stage position, not only because of the demands of the public, but also because recent advances in understanding, measuring, and experimenting with interventions to improve the doctor-patient relationship have shown its potential for having a major impact on patient health outcomes, far greater than imagined. As a result, it needs to be addressed more critically as a health service delivery and policy factor with respect to both quality of care and reimbursement. In this paper, we will address new aspects of measurement of the doctor-patient interaction, ways to affect the doctor-patient interaction, and ways to appreciate the impact of the doctor-patient relationship on recovery and the health of patients. The ultimate goal is to balance the expression of patient preference and the values they bring to the health care encounter with physician professional autonomy. Our research and that of others suggests that there are areas in which patients can be brought into the medical decision making process, express their preferences and values, and incorporate them into the diagnosis and treatment, without threatening the physician's autonomy and professional status.[1]

There are two clearly separate roles for the patients: 1) as evaluators of care, supplying information to be used by others in evaluating the care they receive; and 2) as active participants in care, shaping the nature of the care and influencing the doctor-patient relationship itself directly, in real time.[2] The former focuses on the self-reporting of health status and behaviors that include the patient as a key source of medical information. The latter addresses the issues of how much and in what ways can meaningful systematic participation in medical decision making be made in everyday reality. Patients can be part of medical decisions without being evaluators. On the other hand, patients can evaluate the care without helping to shape its nature.

There is considerable evidence suggesting that patients in the United States want more say in their medical care. Furthermore, expanding the role of patients in care has now been shown to affect both the medical care process and medical care outcomes.[1,3] We have developed interventions designed to include the patient in decision making by training them to obtain information and negotiate effectively on their own behalf at an office visit, and we have shown that their modified behaviors positively influence their health.[4,5,6] We will summarize that evidence here. The patients role as evaluators has been described elsewhere and will not be considered here.[2,7,8]

There are several approaches to expand the patients' participation in care, including informed consent and incorporating patients' values into cost-effectiveness analysis. We will concentrate not on these, but rather on techniques for increasing patient involvement in medical care during the office visits. A key issue in helping a patient to shape their decisions is when and where to encourage patient participation. Including patients directly in their care at any point in the contact with the health system, be it in the office or in the hospital, has the disadvantage of high levels of patient anxiety and lack of preparation in a busy setting. We focused on the situation most likely, from the behavioral perspective, to affect care. The primary care office visit represents the most favorable context in which to expect change and enhance the patient's role in medical decision making, especially over the long run. Primary care is where the early decisions are made, before referral or hospitalization, at which point a cascade of decisions is often inevitable.

In primary care office visits, the patients are usually less sick and less distressed than in the hospital. The physician and patient are more likely to know each other in the office setting than in the hospital setting. The physician can take advantage of a series of sequential office visits to present decisions, discuss alternatives, solicit patient values, demonstrate concerns for these values, and generally interact with the patient. Finally, between the visits, patients can martial family support, review the information on which decisions will be based, make their choices for different alternatives explicit, and then modify and discuss original decisions with the physician on subsequent visits. The research effort of our group has been to design experimental interventions to change specific aspects of the doctor-patient relationship. We examined whether we could affect conversational behavior, measure it, and observe if there were any changes in patient health and recovery related to change in conversational behavior.

We designed several randomized trials testing interventions to increase patients' participation in the medical care process. We measured doctor-patient conversations using audiotapes and subsequent health status using survey, patient report, and physiological measures before and after the interventions over a period ranging from 6 to 18 months. We conducted these studies across a series of diseases, including peptic ulcer disease, hypertension, diabetes, rheumatoid arthritis, and breast cancer.

We chose to begin this work with patients one disease at a time because one of the elements of active patient participation is in-depth knowledge of the factors that influence the specific details of medical decision making. Patients with chronic disease are poised to interact actively with providers because of the salience of the disease-specific decisions, because of their experience and appreciation of the symptoms and ravages of the disease, and because they have often had considerable education, even though it may not have been used. Further, each disease has developed a culture of its own to include the physicians that treat that disease and certain kinds of attitudes towards the disease that enable decision making and even disease-specific jargon. Because primary care includes end stage disease, and acute diseases of various stages, including ones that are at very early stages, patient participation training is critical. Patients cannot engage meaningfully in decision making for the first time just before surgery or during a medical crisis.

We performed interventions in an attempt to get patients to be more active in doctor-patient visits. This intervention included meeting with the patients for 20 minutes just before the physician visit. With them, we reviewed the short entries in their medical records, using a branching logic format guide to help them interpret information. An example might be, if the blood sugar was 287, what steps of those listed were to be taken to lower it? Then, we coached them to ask questions and to return to issues that have not been satisfactorily dealt with. We rehearsed, when possible, questions, statements, and demands that they wanted to express. We compared these interventions to a control group that received education only, rather than coaching.[4,5,6]

In our trials, audiotape recordings of doctor-patient conversation were obtained as the patients enrolled in the studies. At the enrollment visit, they were given a questionnaire to be completed and returned before the next office visit. Baseline clinical measures were also collected at that visit. Patients were then randomized into experimental and control groups in which the appropriate intervention was administered. Physicians saw both experimental and control group patients and were blind to group membership. The conversation between doctor and patient was audiotaped on each visit. The patient was seen again by a research assistant for a second intervention session, just before the next regularly scheduled visit. He or she then completed an "outcome" questionnaire that included patient functional information and well-being. The design of these studies has been described.[4,5,6] Our study in diabetics has been replicated by Rost and colleagues in a hospital setting.[9]

We measured the doctor-patient conversation, using a coding scheme with a total of 30 conversational codes. The codes were divided among three categories: control communication, affect, and emotion. This scheme was derived from an earlier work and has been described elsewhere in detail.[10] Controlling behavior (such as questions or interruptions) by physicians, controlling behavior by patients, information exchanges and both positive and negative emotions expressed by doctors and patients were reported. These indicators were scored as the sum of the conversational codes. For example, a physician could have seven controlling behaviors, four pieces of information and one emotional expression per minute of the visit. We scored doctors and patients independently. In addition, we developed a number of indexes that summarize effective conversational behavior. One was the "Effectiveness Index," defined as the number of factual information statements made by doctors divided by the sum of controlling conversational utterances by the patients. The measures used for our health status and physiologic control have been extensively documented and will not be described here.[7,8,11,12]

In the accompanying Table 1, we show the conversational measures of control, information and emotion/opinion, combining any display of emotion or statements of personal opinion of the doctor or patient. This table represents a total of 209 patients, from the first three of our trials in patients with diabetes, hypertension, and peptic ulcers.

The results, as shown in the table, showed relatively consistent relationships between the various conversational behaviors and functional status at follow-up. Patients who were more controlling were also more effective in eliciting information from the doctor, showed more emotion during the baseline visit, and reported fewer functional limitations at follow-up. Patients whose doctors were less controlling, gave more information and showed more emotion, especially negative emotion (including tension, anxiety, strain, self-consciousness, frustration, impatience), during the baseline visit reported fewer functional limitations at follow-up. The affect/opinion exchange pattern was significantly related to patients' functional limitations. Furthermore, in our research on patients with diabetes, and in the work of Kathryn Rost, patients whose doctors were less controlling and gave more information during the office visits had lower follow-up blood glucose levels.

Our intervention had remarkable impacts on patients' follow-up functional limitations. As seen from the trial of diabetes in Table 2, patients in the experimental group reported fewer functional limitations at follow-up. Patients in the experimental group also had better blood sugar levels than the control group. Patients who underwent the experimental intervention were more controlling, more effective in eliciting information from the doctors, showed more emotion and were more successful in engaging their doctors in discussions involving opinions and emotional exchanges than patients in the control group.

We have extended this work recently. Our earlier trials did not involve the doctors, except to ask them to participate in the studies. Recently, we have attempted experiments to bring the physician actively into the process.[13] We have created a physician intervention at low cost and minimal time to get the physician to adopt a negotiation posture for treatment decisions. Our intervention with the physicians during a half hour visit in their office focused on the mechanics of how to negotiate a medical decision. We asked them to choose a decision and practice a negotiation. The data analysis is not complete, but it is already clear that it is possible to affect physicians' conversational behavior through interventions that are minimal, and that are not seen as burdensome to the physicians. To measure negotiating behaviors, we developed a scheme to score the degree to which the physician laid out two alternatives clearly, expressed the likelihood of the consequences of each of these alternative actions, and expressed his or her own preferences and elicited preferences with the patients.

Our preliminary findings show the importance of carefully measuring not just the global nature of the doctor-patient relationships, but the specific elements of the conversations between doctors and patients and determining the relations of these to outcomes. Our efforts are not designed to diminish the richness of the doctor-patient conversation, but rather to explore under what circumstances which elements are related in what ways to certain kinds of patient outcomes. The results could lead to policy being directed at specific behavior areas rather than a global urging to be more interpersonal or humanistic or to improve interpersonal style in a general, vague way.

In our work, we observed that patient control in the form of questions, interruptions and statements expressed during office visits was associated with improvements in physiologic and functional control of the disease. This work is consistent with earlier studies indicating that exercising control in specific situations, even in minor amounts, can have an impact on health.[14] It is important to emphasize that this and related research indicate that physicians can influence the outcome of patients with chronic disease, not only via medical care, but by shaping how patients feel about the disease, and by helping patients to develop a sense of commitment to treatment and to control the impact of the disease on their lives.

Health services are undergoing rapid changes. Some of these changes, such as decreasing the office visit time, can affect doctor-patient relationships. We need to track the impact of the organizational changes on the style of the doctor-patient relationship and patient outcomes (such is already being done in the Medical Outcome Study) in order to address the critical issues of policy interventions related to the doctor-patient relationship.

Our studies suggest that these relationships have more implications for patients' outcomes than has previously been thought. Therefore, for quality of care and effectiveness policy, it is necessary to design the boundaries of responsibility for care and to measure the specific elements of that relationship that must be preserved and encouraged, in order to maximize patient outcomes without compromising the quality of technical care. The doctor-patient relationship ultimately may be as important as technical care for patients with long-term chronic disease.

TABLE 1

Doctor-Patient Conversation and Patients' Functional Limitations (N = 209)

Conversation Measure[2]	Patient/Doctor		Functional Limitations Index[3]	t[4]
Control	Patient	High	3.7 (1.8)	-2.43*
		Low	4.5 (2.0)	
	Doctor	High	4.4 (2.1)	
		Low	3.8 (1.5)	
Positive Affect	Patient	High	4.3 (2.4)	
		Low	4.3 (3.1)	0
	Doctor	High	4.4 (1.9)	
		Low	3.6 (1.9)	1.62
Negative Affect	Patient	High	3.8 (1.7)	
		Low	4.5 (1.9)	-1.50
	Doctor	High	4.1 (2.1)	
		Low	5.2 (1.4)	-2.37*
Information Giving	Patient	High	4.6 (2.2)	
		Low	2.9 (2.6)	2.71*
	Doctor	High	3.6 (1.6)	
		Low	4.9 (2.1)	-2.67*
Effectiveness Index	Both	High	3.9 (1.8)	
		Low	5.0 (2.0)	-2.20*
Affect-Opinion Exchange	Both	High	4.0 (2.1)	
		Low	5.3 (1.3)	-2.87*

*$p < .05$

[1] Data presented are means with standard deviations in parentheses.

[2] conversational measures were determined at baseline.

[3] Functional limitations were measured at follow-up. Lower scores mean better function.

[4] Based on comparison of group means with pooled variance.

TABLE 2

Effects of the Interventions on Patients' Functional Limitations

Study Sample		Functional Limitations		t^2
		Experimental	Control	
Diabetes (N = 59)	Pre	2.69 (2.14)	3.57 (2.98)	3.19
	Post	1.31 (1.91)	3.30 (3.09)	
Hypertension (N = 102)	Pre	2.91 (2.04)	3.11 (3.01)	4.04*
	Post	1.71 (1.67)	3.40 (2.79)	
Ulcers[2] (N = 44)	Pre	3.11 (2.34)	3.45 (3.68)	2.89*
	Post	1.17 (2.58)	3.71 (3.07)	

$^*p < .05$

[1] Based on differences between groups adjusted for baseline scores in separate analyses of covariance.

[2] Baseline data reflect aggregated health status measure obtained by taking best linear combination of four health status measures from principal components analysis.[41]

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Hospitals' Evolving Role in the Delivery of Primary Care

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Introduction

The past decade has seen a great deal of debate regarding ways to improve the effectiveness and efficiency of the ailing U.S. health care system. The vast majority of this attention has been focused on developing ways to control the costs and utilization of inpatient care, in particular, care involving expensive high-technology resources. Reimbursement reform, managed care strategies, as well as implicit and explicit rationing plans are among the numerous initiatives that have been debated, demonstrated, and implemented throughout the country. However, despite these and other efforts, access to health care has diminished, costs have continued to escalate, and we remain unresolved as to what exactly quality is and how it can be measured.

Ironically, while it has been widely recognized that improving access to a high-quality primary care system is the crucial centerpiece of any solution, there has been significantly less energy focused on developing strategies to expand upon and improve the delivery of primary care services. Indeed, regardless of one's preference for system reform, it is my premise that any viable solution must include increasing the supply of primary care physicians and decreasing the volume of subspecialty services that are delivered. In order to achieve these two goals, strategies must be developed that will reverse long-standing trends to the contrary. In doing so, we can begin to restore the primary care capacity in the U.S. health care system.

The Devolving Role of the Primary Care Physician in the Health Care Delivery System

The imbalance between the primary care specialties and the medical and surgical subspecialties that we see in the United States today is a post-World War II phenomenon. Prior to World War II, the vast majority of physicians were in general medical practice. However, during and after World War II the role of science and technology in medicine rapidly increased and three phenomena occurred in parallel with this new technological focus: 1) the Hill-Burton Act funded the building of thousands of hospital beds with a goal of 4.5 beds per 1,000 population; 2) the National Institutes of Health (NIH) increased funding for specialized research and training programs; and 3) labor unions fought for and won widespread employer-based private health insurance coverage.[1-4]

Increased NIH support produced sophisticated research and volumes of new knowledge and techniques and physicians found it necessary to specialize in order to keep abreast of these advances in their fields of interest. In addition, it was during this era that Blue Cross coverage became widely available and health care became accessible to the middle class. Hospitals, many newly built with Hill-Burton grants, responded enthusiastically to these forces and purchased the latest medical equipment so that these advances could be made widely available to these newly insured patients. Both physician and hospital inclinations toward specialty care were further reinforced by a medical insurance system that rewarded specialty care and procedural work at a much higher rate than generalist care. By the end of the 1960's, most physicians were training in subspecialties of either medicine or surgery and most hospitals remained unconcerned about the decreasing supply of generalists.

The Failure to Restore Physician Balance

The late 1960's and early 1970's brought efforts to redress the imbalance of primary versus subspecialty care. Driving these efforts was a growing acceptance of the concept of equal access to high-quality, affordable health care as a basic right.[5] In 1965 and 1966, Federal legislation made that belief the law. Medicare and Medicaid would provide access to health care to large segments of previously uninsured populations. However, in 1966, the Millis report found that overall there were not enough physicians and, more importantly, not enough generalists to make such access possible.[6] It was in this report that the phrase "primary care" was first coined.

In part as a result of this report, in 1969 and 1974, two new medical tracks emerged.[1] First, in 1969 "family medicine" was established as a medical specialty.[7,8] However, critical to the survival of rural hospitals, general practitioners' licenses were "grandfathered" enabling them to continue to make their important contributions. Similarly, in 1974 internal medicine developed primary care tracks in adult and pediatric medicine. Initially supported by the Robert Wood Johnson Foundation, these training programs were eventually funded by the Health Professions Education Assistance Act of 1976.[9] Programs spread rapidly, and by the early 1980's the majority of postgraduate training programs in the United States had tracks in either family medicine or adult and pediatric general internal medicine or in both.[10]

However, simply creating the primary care residency programs proved insufficient to increase the primary care physician population. The net effect of the Health Educational Assistance Act and various other subsidy programs on the number of primary care physicians has been disappointing. Followup studies have shown that approximately 26 percent of those students who enter primary care postgraduate training programs ultimately do not practice primary care medicine. While there is a small amount of in-migration from other medical specialties to offset the attrition from primary care specialties, the out-migration from primary care far outweighs this small gain.[2]

In 1973, approximately the same time that primary care specialty training programs began, Federal legislation was enacted to provide grants and training funds for the development of Health Maintenance Organizations (HMO's).[11] Based on the successful Kaiser Permanente model, this legislation promulgated the concept of "health maintenance." Rather than rewarding providers with fee-for-service payments, particularly in the hospital, HMO's had economic incentives to prevent disease and reduce hospitalization.

The Kaiser model also recognized the generalist as the most appropriate clinician to coordinate and manage each member's care. While the Kaiser model and other advocates of managed care had recognized the value of primary care physicians, they had little impact on the improvement of these physicians' working conditions, status, or pay. As a result, the gap between primary care physicians' and specialists' pay, status, and working conditions continued to grow.[12]

Estimates of the future internal medicine physician population indicate that the past will be prologue. One projection suggests that between 1978 and 1998, subspecialist internists will increase by 206 percent and general internists will increase by only 77 percent.[13] Thus, the proportion of primary care internists will continue to decline. These projections are further supported by estimates based on the American Association of Medical Colleges' graduation questionnaires, the Medical College Aptitude Test questionnaires, and residency "match" trends. These estimates indicate that student interest in primary care medicine in 1991 was only 17 percent, down from 36 percent in 1982 and 29 percent in 1987.[14]

The failure of Federal training programs and managed care strategies to increase the ratio of primary care physicians to specialists might be attributed to three factors: relative drops in income, increasingly difficult working conditions, and the decline in status of primary care specialists. All three of these trends have continued to favor the subspecialist.

The scientific and technological advances that have been made in the subspecialties have received tremendous attention from both the scientific and popular media. It is not just the scientific community who has placed extraordinary value on high technology medical care. Americans as a whole have been entranced with the technological advances that have been made in the last 30 years. Federal and State health care policies have clearly reflected these values. It is only more recently that Americans have begun to understand at what cost these miracles come.

The changing nature of the illnesses for which generalists are responsible may also make primary care specialties a less appealing option to students and young practitioners of medicine. The aging of our population brings with it an increasing demand for chronic disease treatment. While physicians can manage these illnesses and ameliorate symptoms, curative measures are often beyond their reach. To young physicians who are eager to cure sick patients, this type of treatment may appear to be less satisfying than the curative work many subspecialties can offer.

Finally, and perhaps most importantly, the extraordinary rate of growth in salaries and fees in the subspecialties has far outstripped the growth in primary care fees.

Consistent with the failure of Federal training programs in primary care, data from a recent survey of the American Association of Medical Colleges suggest that it is not the amount of debt incurred during training that determines student career choice, at least not prior to incurring the debt; rather it is the future earning capacity.[15] The failure to reimburse primary care physicians at a level much closer to that of subspecialists has had a profoundly negative effect on the number of students choosing primary care specialties.

Hospitals' Role in and Responses to the Declining Primary Care

Depending on various hospitals' clinical and economic circumstances, hospitals of all types have been affected by and have had an effect on the evolution of primary care delivery. A combination of forces has led hospitals to contribute both to the problems with primary care delivery and to their solutions.

The rural hospital has had the greatest success in the primary care movement. With their strong core of primary care physicians, rural hospitals can meet the diverse needs of their isolated communities. Rural hospitals serve as the support system for the physician, providing backup and infirmary services, and serving as the general center for medical needs. Unfortunately, the combination of the prospective payment system's unfavorable rural regional adjustments and its subspecialty orientation have weakened rural hospitals.

For the suburban community hospital, the experience has been quite different. As medicine became more specialized, the community hospital emerged as the "hub" of that specialized clinical activity. Since capital costs, through Hill-Burton funding, and operating costs, through cost-based reimbursement from commercial insurers, were easily recoverable, hospitals encouraged and even accelerated the diffusion of newly developed technologies. In turn, the high cost of capital equipment forced specialists into a closer relation with hospitals that were able to offer the high-tech environments they needed to deliver subspeciality care. As a result, by the middle of the 1960's, community hospitals interacted mainly with specialists. While generalists continued to admit patients to community hospitals, they become more peripheral to the hospital and its operations.

Urban community hospitals--which are often public or municipal institutions that are poorer than their counterparts in the community--have experienced yet another transformation. In 1966, the Office for Economic Opportunity sponsored the Comprehensive Health Services Program that through the development of neighborhood health centers, established a primary care focus for inner-city caregiving.[16] Despite these efforts, urban hospitals were still unable to fully meet the needs of the inner-city population they served. Although these centers attracted many of the committed generalists that emerged from the new primary care training programs, recruiting and retaining physicians to these centers was difficult and resulted in an abundance of vacant positions.[17,18] As a result, large segments of these inner-city populations received their care in urban hospitals' emergency departments. Also unable to attract a practice staff to care for these patients, urban hospitals hired graduates of foreign medical schools who were eager to receive American medical training.[19] This combination of health centers and hospital emergency rooms continues to serve as the "primary" care delivery system to inner-city populations. Unfortunately, recent reductions in health center funding threatens this already fragile system of care.

Finally, academic medical centers have slowly developed primary care training programs.[20] In order to do so, medical school faculty and hospitals had to reevaluate the way they deliver care. After World War II, training programs became focused mainly on hospital inpatient care. At that time, there were adequate time and resources to enable the trainee to develop an understanding of a disease by watching its course unfold throughout an extended inpatient stay. The introduction of prospective payment and other cost-containment strategies aimed primarily at inpatient costs forced hospitals to use outpatient clinics in the hospital to teach the same information. This presented a challenge to those teaching institutions trying to develop primary care training programs since hospital outpatient clinics were not organized to accommodate teaching and did not generate adequate resources to enable them to develop model practice and teaching environments through experimentation. Nonetheless, medical schools have made and continue to make significant efforts to build these programs. However, the contravening forces described earlier have made this a slow and difficult process.

Impact of Shifting Physician Population on the Delivery of Medical Care

Prior to the "technology era," patients received their medical care almost exclusively at home or in their general practitioners' office. Patients rarely received care from a specialist or in the hospital. However, the declining ratio of primary care physicians to specialists has drastically changed this. As health care has become more specialized, patient care has become an increasingly fragmented process occurring in multiple locations. While therapies were being developed that required multiple specialists' services, systems were not designed to make interdisciplinary care a seamless and easily managed process for the patient. Frequently, services were organized to meet physicians' needs and did not adequately anticipate the difficulties patients might have with services organized in this way. The overarching role of coordinator of care and patient adviser that the general practitioner played was absent in the new specialized delivery system.

The Impact of Various Reimbursement Mechanisms and Regulation on Primary Care Development

Perhaps more than anything else, reimbursement methods have impacted both short- and long-term trends in medical care. For almost 20 years, the United States has struggled to balance individual medical care needs with the medical care needs of society at large. To date, we have remained more focused on individual needs and our health care policies have reflected these values. A number of cost-containment activities that were implemented throughout the seventies and eighties have each had an impact on primary care. Examining these reimbursement changes and "reforms" in the context of individual versus societal needs is a critical part of devising future strategies.

Cost-Based Reimbursement

The advent of Medicare and Medicaid rapidly accelerated the movement toward subspecialization. The previously uninsured elderly and poor were generously covered through cost-based reimbursement for operating expenses and capital "pass-throughs" for hospitals' increasing overhead expenses. Under these strong forces, subspecialty care became institutionalized. Patients were free to go to the specialist of their choice for any and all problems. Some contend that this system is still the one Americans most prefer.[21]

Fee-for-Service Physician Reimbursement

Under Medicare Part B, physicians were also generously reimbursed for their services. Physician reimbursement was based on "customary and reasonable" charges. Predictably, physicians fees rapidly increased.[17] In an attempt to control these costs, Medicare carefully restructured the definition of "customary and reasonable." In doing so, a subtle and probably inadvertent change in attitude toward specialists occurred. Physicians who delivered care that was easily measurable or procedural were generously and unquestioningly reimbursed while the necessity and value of "softer" less identifiable services such as education, coordination of care and advising were called into question and subsequently less generously reimbursed. Specialists' tests and procedures reflected society's high-tech cure over low-tech care philosophy. This philosophy also perpetuated itself. CAT scans were more highly valued than traditional x-rays and soon after that MRI's were considered even more valuable than CAT scans. The gap between generalists' and subspecialists' income has grown in tandem with these technological advances.

The enormous demand for health care services created by the newly insured Medicare and Medicaid recipients combined with the virtual absence of cost controls, drove health care expenditures far beyond predictions. Fee-for-service payment and third-party payors protected both the patient and the doctor from economic disincentives to providing needed care. Hospitals were paid for the costs of all the services they provided without having to justify the appropriateness, necessity, or effectiveness of those services. A rapid explosion of health care fees and the volume of services provided occurred when a large number of previously uninsured patients were directed into a highly specialized, hospital-based system. By the early 1970's, when employers first felt the sting of rising health care costs, the public cry shifted from "access for all" to "cost containment now!"

Managed Care

When Federal support for prepaid health plans began in 1974, prepayment became the first cost-control mechanisms attempted. By shifting the responsibility for costs from the purchaser to the provider, it was hoped that patient care could be more efficiently managed. Regrettably, the appeal of the central role that generalists would play in managing patient care was undermined by strong physician antipathy toward salaried positions.[18] The general acceptance of HMO's was further complicated by physician and consumer concerns that prepayment would discourage the delivery of appropriate and necessary care as well limit consumers' choices of physicians.[19,20] These concerns and others resulted in sluggish growth of the one organizational form that balanced generalist and subspecialist responsibility, status, and pay.

Throughout the 1980's, managed care finally took hold and began to restore the idea of the generalist as the central provider and coordinator of care. Unfortunately, the focus on generalists' ability to manage care and control costs more efficiently has engendered the term "gatekeeper."[21] As Petersdorf recently noted, this term is not one associated with high status in the minds of many physicians.[22] Such a pejorative term and the images it conjures probably has had a deleterious effect on the ability to attract students to primary care specialties. Nevertheless, managed care organizations have the basic structure and philosophical underpinnings to be leaders in restoring physician specialty balance. Recognizing that generalists are key to their growth, HMO's are seeking ways to further enhance the role of the generalist. Perhaps most importantly, HMO's are experimenting with innovative direct physician payments for patient management and coordination of care.

The growth of managed care has had an important effect on community hospitals' need for primary care physicians. Since managed care systems rely on generalists to control the use of specialists, community hospitals without an adequate number of primary care physicians have difficulty attracting the managed care contracts that are critical to their survival. As a result, community hospitals that previously were unconcerned about the shrinking primary care physician population are interested in restoring this balance.

Prospective Payment System

Another important policy initiative that had a major impact on care delivery was HCFA's 1983 introduction of the prospective payment system (PPS). PPS shifted the cost-containment focus from costs of services to the prices of services. Rather than try to regulate costs, PPS encouraged hospitals to focus on their prices and move toward a more competitive pricing strategy. In doing so, physicians and hospitals were given the incentives they needed to develop more appropriate infrastructures and support systems for delivering efficient multidisciplinary care. More importantly, in trying to price their service more competitively, physicians and hospitals had to work closely together to develop ways to more efficiently manage patient care. "Critical paths" and primary nursing models are examples of innovative ways that hospitals and physicians achieved this goal and began to build bridges across and within medical and surgical subspecialties. It is noteworthy that these solutions rarely involved the primary care physician.

PPS did, however, cause an enormous shift from inpatient care to the ambulatory setting. Since pre- and post-hospital ambulatory services were not included in the new unit of reimbursement, tests and procedures formerly done on an inpatient basis became routine outpatient work. While inpatient revenue leveled off and in some cases declined, hospitals were able to generate more revenue on the outpatient side than ever before.

This new source of revenue resulted in a proliferation of outpatient medical and surgical specialty centers. Yet another layer of care was created that was somewhere between traditional ambulatory services and inpatient care. Again, these new centers were not adequately integrated both clinically and administratively into the hospitals' inpatient and more traditional outpatient services, resulting in further fragmentation of the system of care.

Primary care services were not part of this outpatient expansion. Likewise, primary care did not seem to be a particularly good investment as a hospital "feeder" system. With an estimated one inpatient day generated per 1,000 primary care patients, expansion of primary care services was not a potent way for hospitals to fill their increasingly empty beds.[23]

That brings us to the present, with primary care still struggling to find a role in the hospital's patient care system. While managed care initiatives continue to promote the role of primary care physicians, fee-for-service and PPS efforts do not.

Hospitals' Changing Nature and Evolving Strategies

The nineties are emerging with an even greater focus on managed care, causing further illumination of the primary care dilemma. Hospitals are beginning to experiment with providing a broader range of services including preventive care, outpatient care, and institutional and home nursing care. Hospitals are being pushed by reimbursement reform to coordinate and manage care across inpatient and outpatient settings. To provide this broad and sometimes complex range of services, community hospitals are finding that they must forge more cooperative relationships with their medical staffs.

Other forces are reinforcing the potential for an improved physician-hospital relationship. Tough new Medicare anti-kickback statutes will severely limit physician ownership and self-referral for diagnostic and therapeutic services. As physicians are forced to divest their interests in outpatient surgical and diagnostic centers, and hospitals are under mounting pressure to increase referral sources, there are ample incentives and opportunities for both hospitals and physicians to develop innovative relationships.

The Resource-Based Relative Value Scale (RBRVS) will also provide the opportunity for hospitals to forge new physician relationships. As RBRVS further constrains physician incomes, "coordinating" cost-saving strategies may benefit both physicians and hospitals.

Rural, suburban, urban, and teaching hospitals are emerging as the central organizing institutions in the community. Generally not-for-profit and with a board that represents the community's needs, hospitals are now being asked to help coordinate the health and medical care in their communities. In fulfilling this responsibility, it is important to recognize that "health" care is not a series of discrete visits to various physicians or a hospital (that might be better described as medical care). Rather, health care is a coordinated process that includes the identification of risk factors (genetic, economic, or social) screening, patient education, as well as prescriptive measures for specific illnesses.

In order to truly deliver "health" care, it is necessary to put the fragmented pieces of high-tech procedural and diagnostic medical care together with the cognitive and evaluative services of a primary care physician. By placing the responsibility for patients' health care across an entire episode of illness (or "wellness"), in the hands of a physician, a group of physicians, a hospital, or an HMO, (regardless of the locus of that care), even greater coordination and cooperation can be achieved. As such, hospitals should be encouraged to broaden their view of the role they play in their community's health and well-being and move toward delivering "health" not just "medical" care.

In order to fully meet the needs of the communities that hospitals serve, this type of coordinated care must take place. For this to happen, primary care capacity must be expanded. Policy changes must be designed to allow hospitals to take a more proactive role in organizing their medical staffs in order to enable them to develop a rational system of care.

In order to meet the diverse needs of their patients, rural hospitals must be free to use equipment, staff, and beds in ways that currently fall outside of the strict limits of PPS and RBRVS. Suburban community hospitals need to be allowed to use funds that are currently unavailable for such purposes, to develop model practice and teaching environments for primary care. Urban hospitals need additional resources to support existing neighborhood health centers and establish new ones. Academic medical centers need all of the above in addition to bringing the generalist "office" into the center of their departments of medicine and pediatrics. Such a shift in focus will be difficult in the short term, but crucial to long-term success.

Hospitals must not only fight for better incomes for primary care physicians, they must make sure that the gap between primary care and subspecialty incomes closes. It is not sufficient for primary care salary and fees to increase at the same rate that subspecialty fees increase. While RBRVS has begun to address this problem, its impact will be slow and perhaps not significant enough to achieve the goals outlined here.

Another challenge that hospitals must rise to is improving the working conditions for primary care physicians. By providing strong management services for primary care practices, hospitals can remove the overwhelming administrative burdens that these physicians currently bear. To offer a more satisfying personal life for primary care physicians, for instance, hospitals can arrange night and weekend coverage for primary care physicians.

With improved pay and working conditions, primary care physicians will, in all likelihood, also enjoy the benefits of improved status among their colleagues. While in the long run these shifts in salary, status, and power will benefit the patients, hospitals, and physicians, hospitals will be faced with the challenge of managing the short-run problems associated with these shifts.

As always, the future of health care delivery will be driven by the incentives and disincentives provided by the payment system. Many of the structural and institutional changes that I have outlined will require considerable physician payment reform. While RBRVS is a step in the right direction, it has limitations. One way in which RBRVS falls short is in measuring and utilizing outcomes of care. Perhaps the most promising scientific and technologic developments are those associated with the measurement of medical outcomes, functional status, and satisfaction.[24] Research has demonstrated that using survey instruments to gather patient self-reported indications of health can be a reliable indicator of medical outcomes. This information could be used by payors to assess the value of the services rendered by a particular physician. This type of information may have particularly significant implications for generalists, in that there is potential that the value of their cognitive and evaluative services may finally be quantified. Quantifiable improvements in functional status and health could drive the payment system to reflect this value more than it currently does. Hospitals will have to play a key role in developing information systems that can support this kind of evaluation.

Implications for Research and Medical Education

As we have struggled to find solutions to the health care crisis, health services research has blossomed. Drawing on a wider and wider array of social science bases, from anthropology and psychometrics to management and economics, the new generation of health services research has begun to explore in depth the organization and operation of the health care system. The next step in this process is to organize and develop experiments and demonstrations to inform private and public policy makers. These initiatives represent the new "clinical" research, a blend of biological and social science research whose objective is to improve individual patient care, health care delivery for specific groups, and the health care delivery system as a whole.

As this research enables us to better understand the complicated relationships between health and education, job training, family and community, hospitals must become closely involved in developing strategies to turn this knowledge into applied solutions. Public and private support to conduct this work will enable hospitals to advance health and medicine and enter the next decade with a real system of care.

Conclusion

Solving the primary care problem will require sustained efforts at all levels. Changes in the reimbursement system are critical but not sufficient. These changes must be accompanied by changes in the working environment in which primary care physicians practice, and by developing delivery systems tailored for the needs of specific populations. Physicians must have the support of a system that allows them to effectively manage and monitor the care and health status of their patients. This must all occur in a community that values their work and be supported by a body of knowledge that is vibrant and expanding. Finally, this must all be accompanied by an education and training system that produces a steady flow of skilled and capable physicians. Hospitals must play a key role in catalyzing, developing, and implementing these changes.

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Are Employers Receptive to Promoting Health Insurance Plans that Highlight Primary Care and Preventive Services?

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Introduction

Many of the reform proposals now being developed on the State and national levels seek to expand access to health care by building upon our voluntary employer-based health insurance system. Fundamental to such an approach is offering benefits packages that are acceptable to firms that currently do not offer insurance benefits to their workers. These insurance plans must be affordable, especially to small businesses, which account for about half of the working uninsured. Given the limitations on government to subsidize premiums, policy makers may see cutting back on benefits--including primary care benefits--as one way to lower premiums. Thus, an important question facing policy makers and insurers is the degree to which private employers are receptive to health plans that include primary and preventive services.

This paper begins with a brief overview of data on the frequency with which primary care and preventive services are covered in traditional indemnity and health maintenance organization (HMO) benefit plans. The second section examines State-mandated health benefits and "bare bones" insurance plans. The third part analyzes the experiences of projects funded under the Robert Wood Johnson Foundation's Health Care for the Uninsured program, which focused on designing and marketing affordable health insurance products for previously uninsured small businesses. The final section discusses the tradeoffs faced in developing benefit packages for the uninsured.

Trends in Coverage of Primary Care and Preventive Services

Virtually all persons who receive employer-sponsored health benefits are covered for certain "core" health services, including hospital room and board, inpatient and outpatient surgical services, inpatient physician care, and outpatient diagnostic/x-ray services, and physician office visits for acute conditions as shown in Table 1. Almost all are also covered for some mental health care, alcoholism and drug abuse treatment, and prescription drugs. Relatively few enrollees, however, are covered for preventive care services. About 30 percent of large-plan enrollees have specific coverage of such preventive services as well-baby care, adult physical examinations, or immunizations/inoculations. When preventive care benefits are included, they are usually provided in lieu of other major benefits, including prescription drug coverage or home health care.

TABLE 1
Number and Percent of Group Health Insurance Plan Participants with Coverage for Selected Service Types, Private Establishments with 100 or More Employees, 1989

Covered Service Type	Number of Participants (in millions)	Percent of All Participants
Hospital room and board	29.5	100.0
Inpatient surgical	29.5	100.0
Outpatient surgical	29.5	100.0
Inpatient physician care	29.5	100.0
Outpatient diagnostic/x-ray	29.5	100.0
Mental health care	29.3	99.3
Alcoholism treatment	24.2	99.0
Drug abuse treatment	29.1	98.6
Physician office visits (acute)	29.1	98.6
Prescription drugs	28.5	96.6
Private-duty nursing	25.8	87.5
Extended care facility	24.2	82.0
Home health care	22.6	76.6
Dental care	21.5	72.9
Hospice care	12.7	43.0
Vision care	11.4	38.6
Well-baby care*	10.1	34.2
Physical exam (preventive)*	8.5	28.8
Immunizations/inoculations*	8.4	28.5
Hearing care	7.7	26.1
Organ transplantation*	7.6	25.6
Orthoptics	1.0	3.4

*Plan specifically includes this coverage.

Note: Data include only participants who also have coverage for hospital room and board from any plan offered by their employer.

Source: Deborah Chollet's tabulations of the 1989 Employee Benefit Survey (U.S. Department of Labor, Bureau of Labor Statistics). This table will appear in Health Policy and Management: Nine Critical Research Issues for the Nineties, (Ann Arbor: Health Administration Press, April 1992). Both the author and publisher have granted Alpha Center permission to reprint this material.

As shown in Table 2, the Health Insurance Association of America (HIAA) found in its 1990 survey of employers that fewer than one-half of enrollees in conventional plans were covered for adult physical exams, well-baby and well-child care, and childhood immunizations; a little more than half were covered for mammographies and pap smears. In contrast, well over 95 percent of enrollees in HMOs, both staff/group and independent practice association (IPA) models, had coverage for most of these preventive services, while roughly 50 to 70 percent of PPO enrollees were covered by one or more of these benefits. While the Federal HMO Act of 1973 requires "federally qualified" HMO's to offer certain basic benefits, almost all cover these basic benefits in their best-selling benefit package, regardless of their qualification status (64 percent of the Nation's nearly 600 HMO's are federally qualified).[1]

The Employee Benefits Research Institute has reported similar patterns of coverage in comparing special benefits provided by employer-based HMO plans and non-HMO plans. While routine physical examinations, well-baby care and immunization/inoculation were covered for 95 to 98 percent of employees of medium and large firms enrolled in HMO's, only 22 percent of employees in non-HMO plans were eligible for well-baby care benefits and only 14 percent for routine exams and immunizations; percentages in small firms (100 or fewer employees) were about the same.[2]

TABLE 2

COVERAGE OF SELECTED BENEFITS BY TYPE OF PLAN, 1990

(Percentage of enrollees covered)

Benefits	Conventional	PPO	IPA-HMO	Staff/Group HMO
Adult physical exam	30	49	94	97
Mammographies	57	70	95	96
Pap Smears	55	70	97	99
Child immunizations	47	65	97	99
Well-baby care	48	68	98	98
Well-child care	39	58	96	97

Source: HIAA Employer Survey, 1990

State-Mandated Benefits

States have authority to regulate employer-sponsored health plans insured by commercial carriers, HMO's, and Blue Cross and Blue Shield organizations.[3] In addition to levying premium taxes and setting some standards for underwriting, many States require insurers to cover certain mandated benefits. Commonly mandated service benefits are mental health care, alcoholism treatment, drug abuse treatment, and home health care. Many States also require inclusion of certain preventive care benefits, including maternity care, well-child care and most notably, mammography screening.

Since 1990, at least 22 States have passed laws that waive certain mandated benefits for uninsured small groups (usually 25 or fewer employees). They allow insurers to offer so-called "basic" or "bare-bones" insurance plans that can be priced considerably lower than comprehensive benefit plans. Most of the laws specify minimum benefits that must be covered. While nearly all States require coverage of inpatient hospital stays, fewer than half require insurers to offer primary and preventive services. Out of 19 laws surveyed by the Intergovernmental Health Policy Project, only seven States require primary care visits, nine require prenatal care, six require well-baby care, and four require "other primary/preventive care."[4] (See Appendix A for a profile of minimum benefit requirements under State basic benefit laws.)

Such "bare bones" plans have not been very popular with either insurers or employers. Virginia and Kentucky were among the first States to pass legislation to waive mandated benefits for uninsured small firms. In Virginia, five companies have proposed to offer basic benefit plans, but only three have received State approval and only one--Blue Cross and Blue Shield of Virginia--is actively marketing its product. During the first year that the plan was available to uninsured small firms (beginning in July 1990), Blue Cross issued only 26 policies covering 94 lives. Similarly, Kentucky asked over 300 insurers to consider offering basic benefits plans for small groups, but only three have elected to do so; about 20 businesses bought these products during 1991.

RWJ's Health Care for the Uninsured Program

In 1986, the Robert Wood Johnson Foundation awarded grants to 15 State and private organizations under its Health Care for the Uninsured program. Eleven projects successfully entered the enrollment/operational phase and are listed in Table 3. One of the key lessons from these projects is that small employers are not interested in plans with very limited benefits. If they decide to purchase insurance for their employees, they want hospital coverage and other benefits similar to those provided by large employers.

A dozen projects conducted surveys and/or focus groups of small employers and found that many small businesses do not offer employee health benefits primarily because of the high cost of insurance premiums. Although the small employers

Table 3

HEALTH CARE FOR THE UNINSURED PROGRAM DEMONSTRATION PROJECTS

1. **Central Alabama Coalition, University of Alabama at Birmingham:** ***BasicCare***
   Limiting benefits and using public provider network to lower premiums.

2. **Arizona Health Care Cost Containment System:** ***Health Care Group***
   Lowering premiums by subsidizing administrative and marketing costs.

3. **United Way of the Bay Area, California:** ***Health Insurance Information and Referral Service***
   Referring uninsured small employers to existing insurance plans.

4. **Denver Department of Health and Hospitals, Colorado:** ***SCOPE***
   Reducing premiums for comprehensive indemnity plan through major cost sharing.

5. **Florida Health Access Corporation:** ***Florida HealthAccess***
   Using a state buying cooperative to lower premiums for small firms.

6. **Maine Department of Human Services:** ***MaineCare***
   Using direct and indirect subsidies to lower individual costs for small employers and self-employed.

7. **Michigan Department of Social Services:** ***One-Third Share Plan***
   Using direct subsidies to lower cost of existing products for former welfare recipients and low-wage workers.

8. **Tennessee Primary Care Association:** ***MedTrust***
   Using substantial hospital discounts and limited benefits to lower premiums.

9. **Intermountain Health Care Foundation, Utah:** ***Utah Community Health Plan***
   Using a limited provider network and hospitals discounts to lower premiums.

10. **Washington State:** ***Basic Health Plan***
    Using direct subsidies to provide coverage to low-income, uninsured individuals.

11. **Wisconsin Department of Health and Social Services:** ***Small Employer Health Insurance Maximization Project***
    Using direct premium subsidies and linkage to high-risk pool to lower premiums for small firms.

surveyed were very sensitive to premium prices, they also wanted fairly comprehensive benefits. They were most concerned about hospitalization coverage, but were also interested in basic preventative and primary care benefits, as long as they were part of a package covering major medical expenses as well. The challenge for the projects was to design insurance products covering a variety of services, with reasonable volume limitations and cost-sharing provisions, at an affordable price.

Most of the demonstration projects sought to develop new, affordable health benefit plans for uninsured small businesses, using a variety of approaches to reduce premium costs. All of the projects designing new products chose to use some type of managed care delivery system, with restrictions on provider choice. As is typical of HMO's and PPO's, most of the plans endeavored to control expensive specialty and acute care utilization by channeling patients to gatekeeper primary care providers and by encouraging the use of preventive and primary care services.

The Tennessee project's market research indicated that the most important feature of an employee benefit plan is major medical and catastrophic coverage. The employers considered preventive and routine care as "manageable expenses" for their workers and feared that covering such services would encourage unnecessary utilization, resulting in higher premiums. In the end the project developed a comprehensive benefit plan called MedTrust, which covers a wide range of outpatient and inpatient services through a managed care delivery system. The project was able to lower the cost of insurance by negotiating substantial discounts from three participating hospitals.

The project sponsored by the San Diego Council of Community Clinics originally proposed a primary care-only model using a network of community health centers. That proposal, however, was not well received by small employers, who wanted hospitalization benefits, and by the State's insurance department, which indicated it would not certify an insurance plan that did not provide acute care. This benefit plan was subsequently revised to include a wrap-around inpatient option, but, unable to attract an insurance underwriter, the San Diego project never went beyond the development stage.

The Alabama project learned from its market research that premium price was the number one factor for uninsured small employers considering employee benefit plans. They were also quite concerned about providing adequate hospital coverage and, to a lesser degree, outpatient benefits. What they were not interested in was a catastrophic-only plan with high deductibles and copayments. To lower the cost of insurance, the project designed a product, called BasicCare, that drastically limits the range and volume of health benefits. For example, the plan concentrates on basic outpatient preventive and primary care services, including physical exams and well-child care, with an $8 copayment, but limits physician office visits to six per year. BasicCare also limits coverage of hospital inpatient care to 10 days per year, with a $20 daily copayment. Despite its low cost, BasicCare has not generated the anticipated volume of enrollees: only about 44 firms have enrolled, covering some 340 people.

Another strategy used by the Alabama project is to give employers the choice using either a public or a private provider network. The "public option" provider network consists of five county-run clinics for primary care services and the county-run hospital for most acute care services. Over 80 percent of the enrolled groups, however, have opted to pay about 40 percent more in premiums to gain access to BasicCare's "private option" network, which has four additional private hospitals, plus university-based primary care physicians.

In contrast, Colorado's SCOPE (Shared Cost Option for Private Employers), the only indemnity product developed under the Health Care for the Uninsured program, emphasizes both preventive and primary care and, at the other extreme, catastrophic coverage. To keep premiums affordable, it uses major cost sharing for hospital services. Hospital admissions are subject to a $250 deductible per person, and inpatient hospital services and selected outpatient services carry a coinsurance rate of 50 percent on the first $5,000 in charges. The plan covers all out-of-pocket expenditures above $2,750 per enrollee per year. But SCOPE requires only a small copayment for physicians' office visits for primary care and no copayments for certain preventive services, including routine physicals, well-baby visits, and mammography screening. With this unique benefit design, SCOPE's premiums are about 40 percent below these of traditional indemnity plans available to small employers. Although small employers surveyed during the project's planning phase were negative toward the plan's large copayments for hospitalization, they favored its coverage of preventive and primary care services. Judging by SCOPE's very successful enrollment volume--a total of almost 7,900 lives through about 780 firms--apparently many were willing to make this trade-off for the sake of affordable premiums.

The Utah Community Health Plan (UCHP) also promotes preventive and primary care by charging modest copayments for most outpatient services, but requires substantial cost sharing for hospital inpatient care. Under the high-option plan, a $10 copayment is required for primary care office visits, including well-baby care and routine adult physical examinations. For hospital care, however, the copayment is $150 per day for the first four days, with full coverage thereafter. The low-option plan has less expensive premiums but higher copayments, including $200 per day for hospitalization. The project's market surveys had shown that small employers were most concerned about the price of an insurance plan rather than the services covered. By requiring major cost sharing and by using a very limited provider network, the project was able to develop a product costing about 40 percent less than comparable plans. Yet for many low-wage workers in small firms UCHP is still too expensive. So far only about 300 small businesses have enrolled, providing coverage to about 1,700 individuals.

In general, the benefits packages offered by the projects cover the same core inpatient, surgical and diagnostic services as typical insurance plans. Table 4 shows the benefits covered by 16 insurance products designed and/or subsidized under the Health Care for the Uninsured program.

TABLE 4
Coverage of Selected Benefits
in 16 Insurance Plans*

Always/almost always covered (15-16 products)

- Doctors office visits
- Maternity, hospital and physician services
- Well-baby care
- Outpatient diagnostic x-ray and laboratory testing
- Outpatient surgery
- Outpatient routine physicals
- Outpatient immunizations
- Outpatient physical therapy
- Ambulance
- Emergency room
- Hospital inpatient: semi-private room, physicians' fees, associated charges and prescriptions
- Private duty nurse in the hospital

Usually covered (10-13 products)

- Outpatient prescriptions
- Home health visits
- Routine hearing exams and eye exams

Sometimes covered (7-9 products)

- Convalescent care, skilled nursing facility
- Mental health--outpatient
- Mental health--inpatient

Less frequently covered (1-3 products)

- Durable medical equipment
- Prosthetic and orthotic appliances
- Podiatry
- Genetic testing and counseling

*Benefits included in 16 insurance plans developed or supported by Health Care for the Uninsured Program projects as of October 1990.

Source: Alpha Center

Facing the Tradeoffs

What people need most from a health insurance plan is financial protection against catastrophic health care needs. Small employers would like to have coverage similar to large employers, including not only good hospital benefits, but also primary care and preventive services. Comprehensive coverage, however, is too expensive for many small businesses. About 60 percent of all nonaged uninsured persons have incomes below 200 percent of the Federal poverty level, and the premiums of an average HMO plan would consume at least 15 percent of gross income for the typical family in this category.[5]

Policy makers face a difficult set of tradeoffs in seeking to make insurance more affordable. The three product-design strategies for reducing premiums are 1) limiting benefits, 2) limiting enrollees' freedom of choice among providers, and 3) requiring major cost sharing in the form of copayments, coinsurance, and deductibles. From the experience of States trying to encourage "bare bones" insurance products, as well as the BasicCare demonstration in Alabama, neither employers nor insurers appear to be enthusiastic about very limited benefits plans. Channelling enrollees to a very limited provider network is also not popular, as shown by the BasicCare experience where most small employers have chosen to pay higher premiums rather than use publicly-sponsored clinics and hospitals. Similarly, most privately insured persons are enrolled in traditional insurance plans, which generally give enrollees greater freedom of choice among providers than HMO plans. Where plan administrators choose to impose major cost sharing, they should consider the success of the SCOPE project in Colorado, which uses high coinsurance for inpatient and surgical services, but protects enrollees against catastrophic losses and gives them free preventive services and inexpensive primary care.

Given the tough choices among benefit design strategies and the importance of covering primary care and preventive services, the only option--other than fundamentally restructuring the health insurance system--is to subsidize health insurance premiums for uninsured small employers. Such subsidies are especially needed for individuals and families with incomes below 200 percent of the Federal poverty level.

APPENDIX A

MINIMUM BENEFIT REQUIREMENTS UNDER STATE BASIC BENEFITS LAWS

BASIC BENEFITS	AR	AZ	CO 3	FL	GA 5	IA	IL	KS 7	KY	MD	MO	MT	NJ	NM	ND 13	RI	VA	WA	WV
INPATIENT HOSPITAL	■ 1	■ 2				■ 6			■ 8	■ 9		■	■ 11	■ 12		■ 14	■ 6	■	■ 13
EMERGENCY MEDICAL																■			■
OUTPATIENT HOSPITAL		■								■		■	■						■
IN/OUTPATIENT PHYSICIAN CARE IN HOSPITAL									■				■						■
PHYSICIAN SERVICES																			
▸ Primary Care Visits	■	■				■				■						■	■		■
▸ Prenatal Care	■	■				■				■		■	■	■			■		■
▸ Well Baby Care		■								■		■		■		■	■		
OB/MATERNITY CARE	■	■		■ 4		■				■		■	■	■		■	■		■
NEWBORN METABOLIC/SICKLE CELL SCREENING																■			
ADOPTED CHILDREN	■						■											■	
CHILD HEALTH SUPERVISION				■ 4							■ 10								
CHILDREN'S PREVENTIVE SERVICES	■																		
NEWBORN CHILDREN	■	■					■				■ 10	■							
MAMMOGRAMS							■				■ 10			■		■			■
PAP TESTS																■			■
MENTAL HEALTH				■ 4						■	■ 10	■				■			
SUBSTANCE ABUSE				■ 4												■			
HOME NURSING CARE				■ 4										■		■			
OTHER PRIMARY/PREVENTIVE CARE	■									■			■	■					
AMBULATORY SURGICAL CENTER SERVICES				■ 4															
SURGICAL PROCEDURES & DEVICES INCIDENTAL TO MASTECTOMY				■ 4															
MAXIMUM ANNUAL AND/OR LIFETIME BENEFIT	■							■						■					

Source: The Intergovernmental Health Policy Project

Footnotes

1. At least 15 days.

2. A minimum of 15 days.

3. The law does not specify any minimum benefits. It allows small employers to buy group health insurance that does not comply with the State's mental health mandates.

4. The basic policy is not required to contain this benefit, but the law requires that insurers make it available to the policyholder for an appropriate additional premium.

5. The law authorizes the Insurance Commissioner to establish a model basic health insurance plan that provides coverage for primary health care services designated to prevent the need for more expensive health care services.

6. At least 30 days.

7. The law does not specify individual benefits that must be part of the basic package. Instead, small employer benefit plans are required to provide so-called Part I coverage, defined as coverage up to a statutory maximum for necessary care and treatment of sickness or injury in excess of $5,000 for an individual or $7,500 for a family.

8. At least 14 days.

9. Up to 10 days.

10. The law does not mandate the inclusion of any specific benefits or coverage, but limited mandate health insurance policies must offer this benefit.

11. At least 21 days.

12. Up to 25 days.

13. The law does not specify any minimum benefits but requires that the exempted mandated benefits be made available at the option of the individual or employer, for which an additional premium for each coverage can be charged.

14. Up to 20 days.

SOURCE: Intergovernmental Health Policy Project, 1991.

Notes

1. Group Health Association of America, HMO Industry Profile, Volume 1: Benefits, Premiums, and Market Structure in 1990, (Washington, D.C.: June 1991), p. 1.

2. "Percentage of Full-Time Employees Eligible for Selected Benefits by Type of Plan, Medium and Large Private Establishments, 1989; State and Local Governments, 1990; Small Private Establishments, 1990," based on U.S. Department of Labor Bureau of Labor Statistics data, (Washington, D.C.: 1991)

3. A Federal law, the Employee Retirement and Income Security Act of 1974, exempts self-funded plans from State health insurance regulations. Generally, only large companies (greater than 100 employees) can take advantage of this exclusion. Small groups do not have enough lives over which to spread the risk of high-cost claims.

4. Tabulated from an unpublished chart prepared by the Intergovernmental Health Policy Project; used with permission.

5. The average premium for an HMO plan is about $4,250 per year; twice the poverty level for a family of four is $26,800.

Where Medicaid Meets Public Health:
The Alabama Experience

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In Alabama, the State Medicaid Agency and the State Department of Public Health share many common objectives, especially in the area of maternal and child health. Both agencies have worked cooperatively and successfully together to bring down Alabama's high infant mortality rate. In 1986, Alabama had the highest infant mortality rate of any State, but by 1990, the infant death rate had been significantly reduced, due primarily to the combined efforts of Medicaid and Public Health.

Separate and Distinct Agencies

The Alabama Medicaid Agency and the Alabama Department of Public Health are separate and distinct agencies with very different administrations and structures. Medicaid is a cabinet-level department that operates under the direction of the Governor and exists for the sole purpose of administering Alabama's Title XIX program. The agency delivers no services directly but, instead, finances health care services for the almost 500,000 people eligible for Medicaid in Alabama.

Public Health is not a cabinet-level department. It operates under the direction of a board controlled by the physician membership of the Medical Association of the State of Alabama. Public Health delivers many health care and social services through area, county, and satellite offices across the State. Public Health is an important provider of health services for Medicaid recipients.

The Commissioner of the Alabama Medicaid Agency is appointed by the Governor and serves at the Governor's pleasure. The State health officer is appointed by and works under contract to the State Board of Health. As separate political and administrative entities, the appointed leadership of Medicaid and Public Health may not always share the same vision. However, in the last few years, many of their goals and objectives have converged, particularly with respect to services for mothers and children. Both agencies have developed a true working partnership with the ultimate beneficiaries being the four million people who make their homes in Alabama.

Infant Mortality

A shameful and serious problem served to bring Public Health and Medicaid together to achieve common goals and work toward a common purpose. This was, and is, the problem of high infant mortality in Alabama. In 1986, Alabama had the highest infant mortality rate of any State, with 13.3 infant deaths per 1,000 live births. By

1989, the rate was down to 12.1 deaths, but the following year there was a truly dramatic decrease. In 1990, the rate dropped to 10.9 deaths.

This remarkable progress in so short a time is attributable to the unified and aggressive efforts of Medicaid and Public Health. A host of other organizations and individuals were, and still are, heavily involved, drawn together into a loose but effective coalition by the two lead agencies. The dramatic decrease in infant mortality proved the power of a coordinated effort between the two lead agencies and hundreds of private citizens and advocacy groups. This work continues unabated, and Alabama remains committed to continuing to improve all facets of its health care delivery system.

Eligibility Expansion

Alabama's success story began on July 1, 1988, when the State expanded Medicaid eligibility to pregnant women and children up to one year old in families with incomes up to the Federal poverty level. This expansion was truly significant for the State because it marked the first time eligibility for Medicaid had been separated from eligibility for Aid to Families with Dependent Children (AFDC). Since Alabama has extremely low AFDC payments, only the very poorest of the poor gain access to the health care system through AFDC eligibility. Alabama's AFDC payments are only 15 percent of the Federal poverty level.

Since the 1988 expansion, there have been two other expansions, both mandated by Congress. Medicaid in Alabama now serves pregnant women and children through age five with incomes up to 133 percent of poverty and children age six through eight up to 100 percent of poverty. Because of these needed expansions, well over 100,000 women and children have benefited from Medicaid who would not otherwise have been eligible. Thousands of those pregnant women and children, but not nearly all, would have received at least some services from county health departments even without the expansions, thus putting an unsecurable strain on the public health system and severely limiting services for other low-income clients. Now, however, Public Health can depend on Medicaid payment for services to a much higher income population than before. Health departments are able to direct their limited and scarce resources to other pressing needs, including providing prenatal care to women with higher incomes but no insurance.

Maximization of Resources

The maximization of scarce monetary resources is, by far, the most important of all the joint and cooperative efforts undertaken by Medicaid and Public Health to improve service delivery. Whenever possible, State monies available to Public Health are matched with Federal funds through Medicaid in order to provide the greatest benefit to the greatest number of people.

As a low per capita income State, Alabama receives almost three dollars in Federal funds for every one dollar the State contributes to its Medicaid program. This high return on investment is enormously important for a State where one out of five people lives below the Federal poverty level and where per capita income is only 80 percent of the national average. In fiscal year 1990-91, Public Health transferred to Medicaid less than $3 million that was matched with Federal funds to provide a total of almost $12 million for services to Medicaid recipients. In 1991-92, the transfer from Public Health has grown to more than $8 million, for a total of almost $32 million in services. Next year, more than $10 million in State funds from Public Health will pay for services worth nearly $40 million.

This maximization of resources has enabled Public Health to improve services to Medicaid patients receiving care through county health departments. Maternity care and health screening services for children especially have benefited. At the same time, Public Health has been able to redirect more State dollars than otherwise would have been available to services for low-income children and mothers not eligible for Medicaid. In a State where 740,000 people have no health insurance, Public Health's resources are constantly strained. Without the Federal dollars from Medicaid, Public Health's difficulties in meeting increasing needs would be compounded well past the breaking point.

Maternity Care Waiver

The successes of Medicaid and Public Health in bringing down Alabama's infant mortality rate could not have been realized without the maximization of dollar resources on the part of both agencies. In both service design and delivery, there has been a concerted effort to make the best and most efficient use of funds. A prime example is Medicaid's maternity care waiver, hailed nationally as a exceptional model of coordinated maternity care. Now operating in 26 of the State's 67 counties, the waiver has shown a reduced need for neonatal intensive care days and hospital readmissions in the first year of an infant's life.

The waiver involves a primary provider who is responsible for the pregnant woman's care including both health and social services, from the first prenatal visit until after the baby is born. The primary provider can be a hospital, a nonprofit organization, a county health department or almost any entity capable of establishing and maintaining a caregiving network of hospitals, physicians, and clinics. Outreach and case management by social workers or nurses are essential components of this coordinated approach to high quality, cost-efficient care.

Even in areas of the State where the county health department is not the primary provider, the Department is a vital part of the network. An example is the urban-rural area of Montgomery, Autauga, Elmore, and Lowndes counties, where a nonprofit organization called Gift of Life is the primary provider. Gift of Life contracts with health departments for prenatal care and other services to pregnant women in the four-county area.

Without county health departments, especially in the rural communities where most Alabamians live, many pregnant women would have no care at all. Because of the effective working relationship between Medicaid and Public Health, pregnant women all over the State have the advantage of case management, even in areas where the Medicaid waiver does not operate. In these 41 non-waiver counties, Medicaid provides the Federal portion of the salaries for social workers to deliver case management services. Public Health pays the State share of the expense.

Health Promotion and Education

Medicaid and Public Health have joined forces not only in service delivery but also in the health promotion activities. Both agencies have concentrated heavily on encouraging pregnant women to seek early and continuous prenatal care and practice good health habits. Outreach and education programs have focused on influencing behaviors and on ensuring availability of services, once need has been identified and demand has been created.

Good examples of the two agencies' work in focused health promotion are Medicaid's Healthy Beginnings program and Public Health's Storkline. Healthy Beginnings is an award-winning awareness and incentive program open to all pregnant women in the State, whether Medicaid eligible or not. Storkline is directed toward pregnant women as well, but it has different, though complementary, aims and goals.

Through Healthy Beginnings, a pregnant women from anywhere in the State can call a toll-free number and receive coupons worth more than $300 for items such as baby oil, diapers, bread, milk, prescriptions, video rentals, baby portraits, and so forth. The coupon book women receive when they call the number includes valuable information on pregnancy and childbirth and also on other programs such as WIC. It is written in an easy-to-read style with a calendar for marking appointments throughout a pregnancy. The coupons are arranged by month of pregnancy and cannot be used unless validated by the health care provider to show that the patient kept her appointment for care.

In its first year, Healthy Beginnings reached more than 22,000 women, a number that represents more than a third of all births in the State. The program is advertised through mass media such as public service announcements and posters. Health care providers have been enormously supportive of the program. More women report they heard about Healthy Beginnings from their county health department than from any other source.

Public Health's Storkline uses a well advertised 800 number that pregnant women can call if they are having difficulty finding care or they do not know where care might be available. Storkline is designed to unite the pregnant woman with a health care provider, but its services often go beyond this basic aim. Unlike Healthy Beginnings, Storkline always has a registered nurse on hand to answer health-related questions. Many times, the Healthy Beginnings operators refer callers to Storkline, and vice versa. Staff in both programs have developed an excellent working relationship, one that has proved invaluable to thousands of pregnant women with questions or concerns about care.

Public Health and Medicaid are just beginning to realize the possibilities for other joint efforts in health promotion, outreach, and education for the multitude of publics for which both agencies have legitimate concern. Very recently, the two agencies collaborated on the production of a video and booklet on caring for the newborn baby. Most of the production was carried out in-house by Public Health, which has appropriate staff and equipment. Medicaid provided the Federal share of the funding, assisted with planning and maintained advisory involvement in the project from start to finish. The booklet and video have been made available for distribution by obstetrical and pediatric providers, both public and private, throughout the State. In the future, it is likely that the two agencies will undertake similar cooperative ventures.

Outstationing Initiative

Medicaid and Public Health outreach activities extend to eligibility determination for many children and pregnant women. Medicaid has more than 100 workers stationed throughout the State to determine eligibility at the site of service delivery. Sites where workers are located include hospitals, federally qualified health centers and county health departments.

The outstationing of workers has proved beneficial to patients and providers, both public and private. Patients have the assurance of obtaining care more easily because the provider knows payment will be made. Public Health has benefited because, prior to the change, many patients failed to go to the Department of Human Resources to have their eligibility determined, thus leaving Public Health without payment for much of the care it gave. Although many Public Health departments are cramped for space, most welcome the outstationed worker because the worker's presence means much-needed income for the department.

During fiscal year 1992, Medicaid expects to serve a monthly average of 14,000 pregnant women and 64,000 children with incomes at or below 133 percent of the Federal poverty level. These are the women and children whose eligibility is determined by on-site workers or through the mail. The patients have incomes too high to qualify for AFDC, so they benefit from coverage of their medical care but receive no cash assistance.

EPSDT

Public Health is an invaluable provider of services for both mothers and children. Through the program of Early and Periodic Screening, Diagnosis and Treatment (EPSDT), Medicaid pays for well child visits and screenings to detect and treat problems before they become serious or chronic. Public Health and Medicaid are dedicated to improving the program, and, specifically, to the goal of ensuring that more children are screened regularly.

Public Health is the major screening provider for about half of all Medicaid-eligible children in Alabama. Initiatives undertaken to improve the screening rate include Medicaid payment for home visits to children under four months old. While less than a third of eligible children were screened in fiscal year 1991, a goal for fiscal year 1992 is a screening rate of 56 percent. A Federal mandate requires the screening of 80 percent of eligible children by 1995.

Data from the Medicaid maternity waiver experience and Public Health statistics illustrate that Alabama's efforts to encourage early and continuous prenatal care are succeeding and that these efforts are having a favorable impact on the State's infant mortality rate. The waiver especially has been shown to reduce infant mortality in the neonatal period, the first month of life, the period when prenatal care can make a big difference.

Parenting Education

While maintaining emphasis on care during pregnancy, Alabama is beginning to focus on parenting education as a preventive tool. The postneonatal period, one month to one year, is very critical. It is during this period that many babies die because of accidents, failure to obtain needed health care, and parental neglect, whether intentional or not. Important as it is, prenatal care cannot impact changes in the child's health during these 11 months.

Because of these considerations, Medicaid has initiated coverage of preventive health services, a broad category of programs designed to promote physical and mental health and prolong life. Initially, preventive health services will include prenatal and postnatal parenting education services and adolescent pregnancy prevention services. The Department of Public Health is expected to be a major provider of these services, although there will be other providers as well.

Prenatal parenting education classes should help prevent prenatal complications, low birthweight, and neonatal illness and death. Class subjects will include topics such as the importance of prenatal care, communication with health care providers, normal and abnormal signs of pregnancy, coping skills, and effects of alcohol, tobacco, and other drugs.

Postnatal parenting education classes are directed toward preventing illness, injury, death, neglect, and abuse of the newborn and young child. The classes will promote the mental and physical health of both parents and children. Topics will vary according to the child's age but will cover such subjects as care of the newborn, care of the toddler and the young child, normal versus abnormal health signs, and stages of growth and development.

Medicaid's coverage of preventive health services will be beneficial to thousands of families throughout the State. Payment for these services will enable both Medicaid and Public Health to meet mutual goals of better care for children, thus impacting the State's infant mortality rate.

Conclusion

The partnership between Medicaid and Public Health is an important catalyst in Alabama's continuing and determined struggle to build a better and stronger health care delivery system. Through this partnership, the agencies set goals, pool resources, involve each other in planning and health promotion, and deliver services in the most efficient and effective ways possible.

The partnership encompasses not just the public health system but also the private sector in ensuring access to high quality health for everyone, but especially for pregnant women and their babies. Alabama's infant mortality rate has declined significantly and should continue to do so, as initiatives undertaken or planned reach fruition.

Primary Care for Older Persons: The Case for General Principles and Special Concerns

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Any discussion of clinical care for older persons must begin with the caveat that their age alone does not imply the need for special treatment, even though it implies a high probability of being eligible for universal coverage of at least a minimal benefit package under Medicare. Furthermore, the discussion of primary care for older persons covers two overlapping groups: persons over 65 in general and persons with and without current needs for long-term care (LTC). This distinction leads to two sets of related issues:

1. Because virtually all persons aged 65 and over have some way to pay for at least some of the services usually thought of as primary care, the issue for this age group is how factors such as co-payments or lack of coverage for certain items (e.g., drugs) discourage appropriate use or restrict the benefits of the primary care encounter and how the overall quality of that encounter might be improved.

2. Those elderly persons who suffer from conditions that have left them dependent on others for their daily care present LTC problems that interact with primary care. This latter group, which includes those living in nursing homes or receiving home care, is the most common target for geriatricians.

The quality of primary care for both the larger group and the subgroup is shaped by incentives that apply both to consumers and providers alike. Negative incentives include the costs of care, the payment for that care, pressures of time, and lack of understanding about the best ways to diagnose and treat older persons.

How Is Primary Care Distinctive For Older Persons?

Aging is associated with chronic disease. The longer people live, the greater the number of chronic diseases they will accumulate. Primary care for older persons must accommodate the need to treat acute problems (which are likely to occur at about the same rate as in younger persons) in the context of these chronic problems. This combination is reflected in a list identified by a group of primary care physicians, as their most challenging geriatric problems. In order of difficulty these problems are dementia, multiple interacting problems, depression, strokes and transient ischemic attacks, drugs, family and social issues, and atypical presentation of illness (Williams, 1990).

The presence of co-morbidity can make diagnosing an older patient quite a clinical challenge, especially when combined with another attribute of aging, namely use-related reduction in response to stress. Because so many symptoms are essentially the body's response to the insult of disease, a decreased response means less dramatic symptoms; the presentation of disease in older persons is often more subtle than in younger people (Kane, 1989). Silent heart attacks (i.e., without chest pain) or pneumonia that occurs without fever are common phenomena among older patients. Diagnosis is more difficult; acute confusion, for example, may indicate a medication side effect, an infection, or a stroke.

Conceptualizing the difference in caring for older persons compared to younger ones is facilitated by a metaphor of two contrasting panoramas. Illness in a younger adult usually stands out like a butte on a plain; it has a clear onset and distinct symptoms. By contrast, recognizing a new illness in an older person is more like trying to identify a new peak among the Alps. The symptoms of the new disease are often hard to distinguish among all the background noise of extant symptoms from chronic problems.

The greater number of diseases is also associated with more treatments. Many older persons have become walking chemistry sets as the result of polypharmacy. The interactions of these drugs can produce significant iatrogenic consequences. Because older patients may be seen by a variety of specialists, none of whom may know what the others have prescribed, the risk of incompatible or even redundant treatment is high.

Not surprisingly, older persons, who are likely to have more medical problems, have more contacts with physicians. It is unclear how many of these contacts can be termed primary care, but the overall rate of office visits increases with age through adulthood. In 1989, for those aged 45-64, the rate was 3.6 contacts per year, compared to 4.8 visits for those aged 65-74 and 6.0 for those aged 75 and over. The rate of overall contacts (telephone, office, hospital, and other) was 6.1 for those 45-64, 8.2 for those 65-74, and 9.9 for those age 75 and older (NCHS, 1990).

The family constellations of older persons characteristically differ from those of younger people. Older people are more likely to live alone. More are widowed. Although the image of the disintegration of the extended American family is a myth, the relationship of the family to the patient is quite different when the patient is very old or very young. Children are expected to be cared for by their parents; indeed, there is a legal liability for failing to do so. Older persons who have children may look to them for assistance, but the expectations differ. There is neither the legal mandate to provide ongoing care at the time of illness nor the underlying life circumstances that make delivering such care easy. Although families provide the bulk of tangible care to older persons, its provision often requires a substantial rearrangement of responsibilities and logistics.* Physicians cannot be sure that their older patients will have adequate family help on hand for nursing tasks. Although older persons may provide assurances of being able to commandeer such support, the claims may be overly optimistic (Tobin and Kulys, 1980).

One clue to what may be different about primary care for older persons can be found in the advice given to internists by geriatricians. The American Geriatrics Society has produced curriculum guidelines for training residents in internal medicine (American Geriatrics Society, 1991). The guidelines are divided into three categories: attitudes, skills, and knowledge. Interestingly, the first category is more specific than the latter two. Internists are expected to be respectful and compassionate and aware of the limitations of medical intervention. They should appreciate the heterogeneity among older people in matters as diverse as physiology, culture, and values. They should be sensitive to the opinions of family members and other concerned individuals. They should develop positive beliefs in the importance of multidisciplinary teamwork.

Knowledge items cover such subjects as normal human aging and age-related changes in the epidemiology and presentation of diseases, bioethics, adjustments in history-taking, principles of fitness, exercise and rehabilitation, geriatric assessment, nutritional needs, health promotion and disease prevention, perioperative care, organization and financing of health care, and the evaluation and management of geriatric syndromes (depression, incontinence, syncope/balance/falls, immobility, pressure ulcers, drug-induced illness, sensory impairment).

Specific skills presumed needed beyond those an internist would ordinarily possess include the ability to perform a comprehensive geriatric assessment, incorporating value preferences into medical decision making, diagnosis and management of multiple illnesses, management and coordination of care across a variety of settings (ambulatory, home care, nursing home, and hospice).

This curriculum is most instructive when one recalls that it was developed for internists by those who seek to distinguish themselves from internists. Presumably these areas suggest deficiencies in the current training of one major source of primary care physicians. The emphasis seems to be less on the knowledge itself than on how well it is applied. Primary care of older persons thus seems to involve much more attention to issues of social context and ethics than is the case with younger groups. Or perhaps it is just a matter of emphasis. This is the place where those things that should be a part of most primary care must be a part of this type of primary care.

Primary care is particularly imperiled in rural areas. Because of the out-migration of younger, working age persons, the proportion of older persons in rural areas is greater than in urban areas. This demographic fact places a double burden on the rural primary care structure. The increased proportion of older persons have fewer family resources in an area where there are fewer formal services.

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*This observation is not meant to underestimate the burden working mothers face in caring for a sick child.

Attributes of Primary Care

Primary care has been hard to define within the American context, because such care can be provided by specialists as well as generalists. The medical system in the United States does not use the rigid structure found elsewhere, where a primary care provider is the regular point of first contact with patients and the gatekeeper to all specialty care (Stephen, 1979). Primary care has been analyzed according to three Cs; that is, good primary care is expected to be continuous, comprehensive, and coordinated (APHA, 1969; Institute of Medicine, 1987; Wiener, 1987; Holmes, 1978).

Continuous Care

Continuity includes issues of access and availability to a regular source of care. Although the idea of seeing the same physician regularly over a period of years is appealing, it is not at all clear that it is essential, and perhaps may not be that beneficial to the outcomes of care in the long run. Indeed, the evidence of benefit from continuous care is sparse. Only one study has actually tested this effect. A group of veterans in a general medical clinic were randomly assigned to either continuous care or regular care. The group receiving continuous care had fewer emergency admissions, used fewer hospital days, and had shorter lengths of stay when hospitalized (Wasson, 1984).

On the other hand, there is at least anecdotal data to suggest that continuity of physician care is valued by many of today's older persons. For example, efforts to recruit older members into prepaid health plans is often said to falter when enrolling requires them to change physicians. Older persons are said to take comfort in seeing a doctor who knows them and, presumably, is aware of their history and concurrent problems. However, it is not always safe to assume that familiarity breeds insight; a physician seeing a patient regularly may not always attend to the person's many problems or even recall the patient's social circumstances. Moreover, one might argue that, at least periodically, it is helpful to have a fresh perspective to review the status of an elderly patient, especially the pattern of drugs s/he is taking.

One hears the complaint that continuity of care is impeded because the patient outlives the physician.[**] Indeed, it appears that at least in the cohort now elderly, their familiar doctor, who is likely to be chronologically older, is likely to differ in some respects from a new doctor, who is likely to be younger. For example, one study of older physicians found that, compared to younger physicians caring for older patients, they spent more time with them, were more likely to conduct general examinations and counsel them, but were less likely to do mental status tests or visual exams and to discharge patients without follow-up plans (Reuben, 1987).

[**] George Burns' How to Live to be 100 is dedicated to "the widows of my last six doctors."

In 1982, 86 percent of older Americans surveyed could identify a regular source of medical care, a higher proportion than found among younger age groups (Aday, 1984). This rate improved by 1986 to almost 88 percent (Robert Wood Johnson Foundation, 1987). Indeed, thanks to Medicare coverage, elderly persons seem to be relatively advantaged according to the continuity criterion. Correcting for socio-demographic and health status factors, Haywood and colleagues suggested that insured working age adults were 1.7 times as likely to have no regular source of care as were elderly persons (Haywood, 1988).

Likewise, most elderly persons were likely to have seen a physician in the past year. In 1982, 87 percent of older persons reported seeing a physician at least once in the past year, compared to younger adults with rates of 76-83 percent (Aday and Anderson, 1984). Again correcting for sociodemographic and health factors, insured working age adults were 1.3 times as likely to have had no physician visit as were older persons (Haywood, 1988). Looking at the subgroup of persons who had at least one of 11 defined medical conditions in 1986, a national survey found that 17 percent of persons age 65 and older reported not seeing a physician, compared to about 22 percent of those age 35-64 (Robert Wood Johnson Foundation, 1987). Once again, when socioeconomic and medical variables were controlled, the proportions were about equal (Haywood, 1988).

One indication of inadequate primary care is the use of emergency rooms. A study of patients coming to a California emergency room showed that those aged 65 and above represented almost 21 percent of visits, a proportion somewhat lower than that of elderly persons' use of medical care as a whole. Older emergency room users were more likely to be admitted to the hospital, suggesting that the reasons for the visit were not frivolous (Baum and Rubenstein, 1987). In contrast, a recent series of studies by the Society for Academic Emergency Medicine has uncovered several significant problems in this area. Elderly persons are slightly disproportionately high users of emergency rooms, but the five-fold increase in the proportion of elderly persons admitted from emergency rooms to hospitals suggests that this use is for significant events. Elderly persons account for 43 percent of all hospital admissions and 48 percent of critical care admissions from emergency rooms (Society for Academic Emergency Medicine, nd). These findings are consistent with a picture of primary care failure.

The Society also found that many emergency room personnel felt less comfortable dealing with older patients than with younger patients with the same complaints. Part of this discomfort was attributed to concerns about how to manage the altered presentation of diseases or the multiple medications older persons were taking. There was also discomfort with the lack of available resources to mobilize the social support services these patients needed. In short, the emergency room is a poor place to deliver primary care for older persons.

Some older persons have problems with access to care. Those living just above the poverty line may find it hard to pay the deductibles under Medicare or even to afford the cost of transportation to the doctor's office.

Physician attention is just part of getting care. Unless one can act on the information, the visit may not be valuable. Medicare does not pay for medications, and for many older persons with several chronic conditions, the costs of medications may represent a large portion of their disposable income.[***]

Older persons do not bring all their problems to the attention of medical providers (Brody, 1983). In some cases, they may have the same difficulty as physicians distinguishing new symptoms from old problems or may simply attribute the discomfort to old age. Continuity is impaired by the frequent use of specialists. In this country, where specialists can be accessed directly without a physician referral, many persons use multiple physicians who may be unaware of each other's activities. This problem is especially acute in the case of older persons, who often suffer from multiple problems involving different organ systems. As the number of specialists relative to primary care physicians has grown, it is safe to assume that discontinuity has increased as a by-product. Speciality care is being expanded to older persons. Procedures once reserved for younger patients with lower health risks are now being offered to an increasing number of older patients (Leibson, 1990).

Coordinated Care

Coordination refers to the extent to which care rendered by different providers is managed in order to maximize the opportunity for a focus on the individual patient. Such coordination can occur at several levels. Most often one thinks about a single physician coordinating the care of other physicians so that someone knows what is happening overall. But coordination also applies to the interaction among different types of providers, for example between physicians and social workers, community nurses, physical therapists, and occupational therapists. The need for coordination also includes the interface between those providing formal services and those offering informal care. There is reason to believe that knowledge of what the others are doing can make the task of each participant in the care process more effective. Taken to an extreme, this push for coordination becomes the foundation for interdisciplinary team care.

[***] Coverage under Medicare for medication costs, after a sizable deductible, was proposed under The Catastrophic Coverage Act, but the Act was repealed about a year after it was enacted.

The increase in specialty care makes coordination ever more important. Outside of those HMO's that rely on some form of primary care gatekeeper who must authorize all referrals, there is little provision for such coordination. The older person with multiple medical problems is especially at risk of fragmented care. A study of one primary care group practice based in a VA hospital showed that older patients were more likely to be referred to subspecialists than younger patients. The most commonly used specialties were ophthalmology, podiatry, otolaryngology, and urology (Charles, 1987).

Coordination is especially threatened at points of transition from one care system to another. Perhaps the most common of these is entry into the hospital. As hospital care becomes increasingly technologically intense, more of it must be provided by specialists. Admission to specialized units, like coronary care, must be under the supervision of a specialist. Unless the primary care physician makes active efforts to retain an interest in the case (and this is discouraged by Medicare billing procedures) or the specialist is conscientious about communicating the results of his/her care back to the primary care physician, coordination is threatened.

Discharge from the hospital can also be an occasion for poor coordination. With the shortened lengths of stay under Medicare as a result of prospective payment policies, hospital patients are being discharged quicker and sicker (Kahn, 1990) and they are more likely than previously to receive some form of post-acute care (Gornick and Hall, 1988). More than ever, physicians must interact with other types of providers, especially home health care and nursing homes.

The move to a nursing home can cause a major source of loss of continuity of care for older persons. Primary care physicians provide most of the care for nursing home patients, but only a small proportion of primary care physicians care for nursing home patients. Most primary care physicians go to great lengths to avoid working in a nursing home (Mitchell and Hewes 1986). Nursing homes are not attractive places for doctors; there is fewer and less sophisticated staff than are available in hospitals. Medicare requires one visit per month but also tends to perceive this as a maximum, demanding extensive documentation before paying for more than the one required visit per month to nursing home patients. One way to promote more continuous primary care for nursing home patients may be to use other kinds of providers to deliver substantial portions of such care. Recent Federal legislation permits payment under Medicare to non-physician providers (geriatric nurse practitioners and physician assistants) for primary care in nursing homes. They have been shown to provide care comparable to that offered by physicians (Kane, 1990; Kane, 1991).

Communication between physicians and home health agencies is often sparse. Although a physician's orders are necessary to authorize home care, such orders are often drafted by the home health nurse and passively approved by the physician.

Because even fewer physicians make housecalls than nursing home visits,[****] the opportunity for direct interaction (other than quick telephone conversations) with the home care providers is scant (Steele, 1991; Keenan and Hepburn, 1991).

Comprehensive Care

Comprehensive care addresses the range of services provided. Here, too, multiple problems often presented in a single older patient make it more salient that the whole person, rather than a single organ system, be treated. Despite the fact that older persons often have communication problems, in addition to more complex interactive problems, the average time per visit with older patients is less than that with younger ones (Radecki, 1988).

Moreover, there is some suggestion that the investigation of elderly patients is not as thorough as with younger patients. Radecki and his colleagues noted that the use of common laboratory tests with older patients was often less intense than with younger patients. This difference reflects, in part, a lack of familiarity with the changes in diseases associated with aging. The pattern of laboratory test use showed an underuse of tests for problems more common in older persons (e.g., thyroid disease) and an overuse of others (Radecki, 1988).

An area of particular neglect in the care of older patients is prevention.[*****] The pattern of activity here varies with the procedure. Older persons are very likely to have their blood pressure taken (although not necessarily brought under better control). A 1982 survey showed that 86 percent had had their blood pressure taken at least once in the previous year (Aday and Andersen, 1984). But, the same survey revealed that older women were less likely than younger women to have had a pap smear done. The proportion of older women who had a breast examination was lower than that for those 17-54, but higher than that for those 55-64 (Aday and Andersen, 1984).

Kane and his colleagues have classified risk factors for preventive services into the following categories:

- problems that can be addressed in traditional preventive terms (heart disease, stroke, cancer, fractures, and infectious diseases)
- behaviors likely to produce beneficial or adverse effects on health status (smoking, diet, exercise, stress, and isolation)

[****] Housecalls are especially poorly reimbursed under Medicare.

[*****] Medicare does not encourage prevention. It pays for only limited preventive services: a modest payment for mammograms and for some immunizations.

- problems requiring increased attention from caregivers (vision, hearing, dentition, depression, alcohol problems, and sleep disturbance)

- iatrogenic problems (drugs and nosocomial infections as well as disability from "overprotective environments" and nursing home admission) (Kane, 1985).

A number of recent studies have suggested that preventive services may be beneficial for older persons. In addition to routine screening for treatable problems, smoking cessation, (Hermanson, 1988) exercise, (Larson, 1991) and perhaps even cholesterol reduction (Kaiser and Morley, 1990) can have positive effects on the health of older persons. As part of a review to assess the appropriateness of expanded coverage for preventive services under Medicare, the Office of Technology Assessment has looked at several preventive procedures for possible inclusion in Medicare coverage. They concluded that the cost-effectiveness of screening for colorectal cancer was on par with already covered services like cervical cancer screening (OTA 1990). Cholesterol screening was not cost-effective because of the evidence of benefit from treatment among older persons (OTA, 1990). The benefits and costs of screening for open-angle glaucoma were not clearly determined (OTA, 1988).

One of the most common preventable iatrogenic problems among older persons is the misuse of drugs. Because of their multiple medical problems, older patients receive a disproportionately large number of drugs. Although they comprise only about 12 percent of the population, they account for about 25 percent of all drugs used. As a result, they are literally walking chemistry sets. The interactive potential of these drugs and their possible side effects suggest a need for greater monitoring of their use. Because older patients may receive care from multiple physicians, each unaware of what the other has prescribed, the dangers are especially high.

In some cases, efforts to control the use of drugs may have unforeseen negative consequences. Soumerai and his colleagues have shown that one attempt to limit the number of drugs paid for by Medicaid was associated with a paradoxical increase in nursing home admissions (and a non-significant increase in hospital admissions). It was not possible to assess the effects of deteriorating health status from seeking a means to avoid the three-drug limit (Soumerai, 1991).

The most dramatic attempt to introduce more comprehensive care for older persons has come in the form of geriatric assessment, or what is now termed geriatric evaluation and management. The change in terminology is a recognition that simply assessing the problems is insufficient; an organized program of treatment is needed. The experience with geriatric assessment has been extensively reviewed, although there is some difference of opinion about how to interpret the evidence. Rubenstein suggests that most of the controlled studies indicate a general pattern of benefit; (Rubenstein, 1987) but others call for more cautious conclusions, noting that the benefits depend on the extent of targeting and the types of care used for comparison, and that many studies show only modest gains (Kane, 1988).

It is still not clear just what sorts of interventions are needed or whether geriatric assessment constitutes improved primary care or a specialized service reserved for those in great need. In some cases, simply more careful and deliberate attention to a cross-section of community-based older persons achieved through periodic visits by a public health nurse appears to make a substantial difference (Vetter, 1984; Hendricksen, 1984). In other cases, careful comprehensive assessment done in the setting of either an HMO (Epstein, 1990) or a preadmission screening program (Williams, 1987) showed only modest gains compared to a similar effort performed by component physicians.

It is safe to conclude that the effectiveness of geriatric assessment will depend on who is being assessed. Targeting the right group of older persons, at risk of becoming substantial problems for care management remains an important challenge to primary care.

The recent attention to advanced directives points to a major change in the ethos surrounding primary care of the elderly. It has become desirable for older persons to make advanced decisions about the extent of technologically intense care they wish used on their behalf under circumstances where the results are dubious. Ideally, the older person's primary care provider would be someone who knows the patient well and can assist that individual in addressing these momentous decisions. Primary care providers should be central to other decision making events in the lives of their elderly clients. The provider should play a disinterested role in assisting the patient to make decisions about major dislocations that best reflect the client's values and preferences, while taking account of the expected benefits and risks of alternative interventions. These sorts of calculations are not easily made but will nonetheless likely become more common.

Quality of Care

Although there have been concerns expressed about the quality of care available for older patients, especially in primary care, (Institute of Medicine, 1990) there are few studies that point directly to problems. Heller and his colleagues used data from the National Health and Nutritional Examination Survey (HANES I), collected between 1971 and 1975, to develop five "tracer" medical conditions for which they determined that the care failed to meet minimum standards in 26 percent to 80 percent of the cases, often because the physician had failed to respond properly to the complaints of elderly patients (Heller, 1984).

The national Medical Outcomes Study looks at the nature and outcomes of ambulatory care provided by family physicians, general internists, and selected specialists for adults of all ages, including older persons. The early results show that different organizations of care (HMO, multi-specialty prepaid groups, single-speciality pre-paid groups, and various fee-for-service arrangements) have different proportions of patients aged 65 and older (Kravitz, et al., 1992). There is the potential for analyzing the care of older persons and the associated outcomes (Greenfield, et al., 1992).

In a study of care in nursing homes, Rovner and his colleagues showed that psychiatric problems were inadequately diagnosed and treated (Rovner, 1991). Garrard and her colleagues have shown similar problems in the use of psychoactive medications among elderly nursing home patients (Garrard, 1991).

Several studies of primary care in nursing homes have examined the quality of care delivered by geriatric nurse practitioners (GNP's). Compared to physicians, GNPs were more likely to follow appropriate steps in delivering quality, as reflected in higher scores on clinical algorithms (Radosevich, 1990; Buchanan, 1990) but the outcomes of their care were not distinguishable from that provided by physicians (Garrard, 1990).

Some common problems of older persons appear to be undertreated. Rubenstein has shown that many common, correctable problems go unattended and that relatively simple steps can bring them to beneficial attention (Rubenstein and Josephson, 1988). Tinetti has shown that falls can be better evaluated and treated (Tinetti, 1991). Ouslander has shown that only about five percent of urinary incontinence has been diagnosed and evaluated (Ouslander, 1982). Dementia is not well recognized by primary care physicians, who are also hard pressed to manage its social as well as clinical sequelae (Katzman and Jackson, 1991). A study of the accuracy of diagnosis for dementia on a teaching internal medicine service showed that interns missed 21 percent of patients subsequently diagnosed after more careful study as having dementia. These interns labeled a similar proportion of older patients as demented when they were not (Roca, 1984).

Older patients are sensitive to both the art and the science of primary care. One study of how older patients evaluate such care used videotapes of a simulated doctor-patient encounter in which elements of the care were systematically varied. Older observers were able to detect differences in the thoroughness of the "doctor" and were sensitive to his style of communication as well (Chang, 1984).

Personnel

Interest in geriatrics can be said to have actively developed only a little more than a decade ago. Although the role of geriatrician is still being debated, their contributions are better appreciated. It is still not clear whether the geriatrician should be considered a provider of primary care services for some of the older persons who particularly need coordinated and comprehensive care, or whether s/he should function solely as specialist to whom complicated cases are referred for short-term interventions, after which the patients are sent back to their primary care provider. Nonetheless, two phenomena are apparent, although neither to the extent many would wish:

1. physicians are being trained with special skills in geriatrics; and
2. more general physicians are acquiring some knowledge about how to care for older patients.

Progress is slow. A few years ago, only 36 percent of internal medicine residency programs and 80 percent of family practice programs had a formal geriatric curriculum (Reuben, 1990). At least part of the difference can be explained by the American Board of Family Medicine requiring formal training in geriatrics as part of its accreditation process.

The emergence of a Certificate of Added Qualifications in Geriatric Medicine for physicians already certified in either internal medicine or family practice has provided one vehicle to recognize formally the special knowledge in this field. Nearly 4,300 physicians took the first examination in 1988, of whom 2,407 passed; another 1,677 passed the examination given in 1990 (personal communication from the American Board of Internal Medicine, courtesy of John C. Beck, M.D.). The examination in 1992 is the last time that physicians who had not had formal training in geriatrics will be permitted to take the examination. However, the supply of physicians dedicated to care of the elderly is still much less than what is needed. Anecdotal evidence suggests that many who took the examination do not consider themselves geriatricians, nor do they restrict their practice to older patients. A projection of geriatric personnel needs done in 1981 indicated a need for approximately 10,000 physicians skilled in this form of care (Kane, 1981). The number of physicians who report geriatrics as one of as many as three specialities listed in the annual AMA survey has increased from 715 in 1977 to 1,113 in 1988, far short of the projected needs (Reuben, 1990). Moreover, geriatric training programs are graduating only about 100 fellows a year (Reuben, 1990). Although geriatrics has been introduced into the curriculum in many medical schools, it is often only an elective or a minor part of medical education (Vivell, 1987).

Part of the gap can be filled by using other types of care providers. Geriatric nurse practitioners and, to a lesser degree, physician assistants are being trained to provide primary care to older persons and have been shown to perform competently (Mezey and McGivern, 1986).

Restructuring the Care Environment

One opportunity to promote better primary care for older persons would seem to come through the use of capitated care such as that provided through Health Maintenance Organizations. A decade ago, the Medicare legislation was amended to permit HMO's to offer Medicare beneficiaries inclusive coverage through so-called TEFRA HMO's (named after the 1982 act that implemented the program). Such coverage had to include at a minimum the benefits normally provided under Medicare, but most programs offered more including drugs and preventive services. The TEFRA HMO's are funded at a rate calculated at 95 percent of what Medicare was currently spending for care in the locale. This capitated care appears to be a natural vehicle to achieve the three C's of primary care. It can provide a coordinated set of enhanced services delivered through a single entity and orchestrated by a primary care provider. Continuity can be achieved both by an integrated record system as well as uniform procedures and a single site of care.

In fact, TEFRA HMO's have not proven to be the panacea for primary care of older persons. A current study indicates that only a few of the programs chartered have made any efforts to alter their approach to care from that used for younger adults. For the vast majority, it has been business as usual, relying on marketing to attract those older persons who needed the fewest services.

The heavy demand for care by older persons. for example, has been cited as a major reason for the failure of rural TEFRA HMO's, where the payment determined by the Average Area Per Capita Cost does not cover the costs of such care.

An innovative approach to capitated care for dependent older persons, who have been assessed as needing nursing home care, is provided in the model developed by On Lok in San Francisco's Chinatown and now being replicated in eight sites around the country (Kane, 1991). This model of primary care is based on intensive use of day health care with active integration of medical and social activities. The emphasis is directed toward keeping the client out of an institution. Although it is too early to determine how well such an approach will work in other settings, it is a model worth watching.

The New C's of Primary Care for Older Persons

As primary care itself is re-examined in the context of a changing environment, it is worthwhile to consider whether the models of the past are still applicable in a medical environment that has become very sophisticated and reliant on specialized skills. The definitions of continuity, comprehensive, and coordination of care may have to be modified to fit into this new configuration. Moreover, while retaining elements of the old Cs, we might consider adding some new ones, such as Competent, Cost-effective, Caring, and Convenient. Perhaps even Computerization should be considered.

Some of these are easy to address. Competence speaks to more than the general growth in knowledge about disease and the technologies available to combat it; it also refers to specific skills in diagnosing and managing geriatric syndromes. Caring means compassion and appreciation for the plight of both client and informal care givers, as well as a commitment to stay with the patient through changes in locus of care and as the patient's condition deteriorates. It means caring for the patient as a person, eliciting and respecting the patient's interests and preferences.

Other aspects of care imply more subtle changes in the meaning of familiar words. Coordination need not necessarily imply directing care. In an emerging world of multidisciplinary care, where different professions may play the lead role, primary care physicians may make their major contribution by integrating their care into the plan designed by a team. The primary care physician may become, in some instances, one of the professionals being coordinated, rather than the coordinator.

Comprehensive care needs to address the whole patient. For geriatric care this means, on the one hand, treating any simple problem within the context of all others; and it also means addressing those aspects of care that are less comfortable, such as patient preferences and values.

Continuity of care may be better achieved today through a well maintained and readily accessible information system than in the addled brain of some Norman Rockwell physician. Electronic information management makes possible dissemination and display of pertinent data in ways that can prompt care providers to respond. Structured collection and systematic analysis of data provide mechanisms by which to identify and address multiple simultaneous problems.

Recommendations

1. Primary care providers need to be paid better, relative to other forms of medical practice. At least part of the allure of a technologically sophisticated practice is the substantially better rate of reimbursement afforded. A surgical procedure or an endoscopy pays many times the hourly rate of doctor-patient interactions in primary care. Activities such as geriatric assessment, which require the participation of several persons from different disciplines, do not currently generate Medicare revenue sufficient to cover their costs. The changes in reimbursement procedures under the Resource-Based Relative Value Scale are a step in the right direction, but only a small step.

One approach to paying for at least selected geriatric services may involve some form of modified capitation or prospective payment, in which a lump sum is paid to cover a cluster of activities. Such a scheme would facilitate payment for Geriatric Evaluation and Management. Under this arrangement, a single fee would cover the costs of a multidisciplinary assessment, related tests, and care for a defined period to stabilize the patient. Criteria would need to be established for eligible provider groups (presumably a multidisciplinary team including a physician with a Certificate of Added Competence in Geriatrics and perhaps further specifications). Likewise, criteria for patient eligibility would need to be established (perhaps based on risk of subsequent adverse events).

Another area where capitation may facilitate geriatric primary care is in the nursing home. There already exists a model for capitating medical care for nursing home patients, including the cost of subsequent hospitalizations, as a subcontract for TEFRA HMO's. The advantage of such an arrangement is the flexibility it provides. Frequency of visits and the use of non-physician personnel become internal management issues, although some safeguards to ensure minimally adequate levels of care may be needed.

2. The value of geriatric care needs to be better demonstrated. Although there is a strong intuitive basis to believe that the philosophy of comprehensive patient-centered care is well suited to the multiple interactive problems presented by many older patients, there is not yet strong and consistent evidence of the efficacy of such care. There have been a number of randomized controlled trials of geriatric assessment in different forms and different contexts with varying results, but a geriatrically oriented approach to organized primary care has not been tested in any rigorous fashion. This gap is not surprising, because primary care itself has never been subjected to serious testing. There have been no carefully controlled comparisons of the outcomes of care from an organized primary care approach and traditional care (e.g., multispecialty group practice). One might expect that prepaid care would present an excellent opportunity to test ways of delivering better primary care to older persons. The so-called TEFRA HMO's, which provide capitated care for Medicare beneficiaries, rely on various forms of HMO's and should be the setting for such experiments. Thus far, very few TEFRA HMO's have made any substantial changes in their mode of care from that used with other adult patients.

3. Geriatric education needs to be emphasized and supported. The emergence of the National Institute on Aging in 1975 marked a milestone in geriatrics. It, along with several foundations and, to a lesser extent, other parts of the Federal Government, has made an investment in the academic infrastructure to produce faculty to teach and model geriatrics. But the establishment of active geriatric programs in health sciences schools has not been as aggressive as needed. Too often, the commitment is only superficial. Geriatric courses are available but not required. Material on aging is mentioned in passing in other contexts, but students do not have an opportunity for sustained exposure to positive models of geriatric practice. Few health science schools have established model practices that demonstrate the benefits of good geriatric care. Programs like the Robert Wood Johnson Foundation's Teaching Nursing Homes proved expensive to maintain. The NIA Teaching Nursing Home Program rapidly became a vehicle for research program project grants, many of which did not even involve nursing homes. The national efforts to establish Geriatric Education Centers have not focused on sustained development of clinical training for health professional students.

4. The distinction between primary care and case management in the care of dependent older persons needs to be clarified. Both of these roles imply oversight and coordination, the former from a medical model regarding health care, and the latter from a social perspective. Long-term care case managers, who tend to be social workers or nurses, are often vested with authority for the allocation of public dollars in care plans that involve personal care workers, homemakers, home modification, medical equipment, day care attendance, and other services. The efficacy of case management, like the efficacy of primary care, is difficult to establish (in part, because of the difficulty of developing appropriate comparison groups). In the meantime, LTC case managers and primary care physicians seldom interact. The result is that they may be working at cross-purposes: case managers may be insufficiently informed about the medical condition, and physicians may be uninformed about possible social programs available for clients.

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How Does Primary Care Address Mental Health Needs of Mentally Ill and Substance Abusing Populations?

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Introduction

Approximately two-thirds of people in the community with mental and substance abuse disorders are evaluated and treated only within the primary care medical sector.[1] These findings led Regier and colleagues to label primary care medicine the de facto mental health service system in the United States.[2] Since the more severe disorders such as schizophrenia and manic-depressive illness and the personality disorders are preferentially referred to the mental health systems, an even higher percentage of patients with anxiety and depression are treated exclusively in the general health care system, especially primary care. In the recent Epidemiologic Catchment Area Study sponsored by the National Institute of Mental Health, it was demonstrated that 70 percent of patients with affective illness visited a general medical clinic over a six-month period, whereas only 20 percent visited a mental health professional.[1]

This paper will review the prevalence of major depression, panic disorder, and the substance abuse disorders in the primary care system, their relationship to somatization and health care utilization, the accuracy of diagnoses by primary care physicians and the educational and structural impediments in primary care to prompt diagnosis and effective treatment of mental disorders.

Prevalence of Mental Illness in the Primary Care Setting

Multiple community studies utilizing structured psychiatric interviews have demonstrated that two to four percent of people suffer from major depression.[3,4] In the primary care sector, three distinct methodologies have been developed to investigate the epidemiology of affective illness in such settings.[5] The first analyzes the prevalence of psychiatric illness recognized by the primary care physician and recorded in the medical chart. The second screens primary care patients with depression rating scales that generally are sensitive (few false-negatives) but not specific (many false-positives). The lack of specificity in use of depression rating scales results from the fact that many primary care patients with organic illnesses, such as hypothyroidism or other psychiatric illnesses such as adjustment disorder, may be affectively distressed but not severely enough to suffer from major depression. The third and most recently developed methodology studies the prevalence of depression in primary care with structured psychiatric interviews which generate operational criteria for diagnosis.

Multiple studies have found that physicians do not accurately diagnose a large percentage of patients with major depression.[5,6] These undiagnosed patients with depression are thus false-negatives when psychiatric morbidity rates are determined by physician chart notation. Also, a smaller percentage of patients who are diagnosed as depressed by physicians do not meet criteria for depression on structured psychiatric interviews (these are false-positives).

Another potentially confounding factor in depending on physician-coded diagnosis to ascertain prevalence rates of mental illness is intentional miscoding of diagnosis by primary care physicians. Recent data suggest that in one-third to one-half of patients with major depression that is accurately diagnosed by primary care physicians, the diagnosis that is placed on the billing form is intentionally change to avoid the societal stigmatization of the patient (i.e., loss of life insurance) and/or to allow better chance for third-party coverage of the patient's bill.[7] Several large studies have determined that primary care physicians code the diagnosis of depression in between 1.5 and 4.5 percent of patient visits.[5]

Numerous studies have investigated the prevalence of patients scoring in a moderate to severe depressed range on a variety of depression rating scales. Approximately 9 to 30 percent of primary care patients have been found to score high on these measures of affective symptoms.[5] These differences in the reported prevalence rates reflect the fact that different scales were used in a variety of studies; different cutting scores were applied with the same screening instrument; different populations were surveyed (university clinics vs. health maintenance organizations vs. predominantly middle class practices); selection factors in the population studied were different, such as random versus consecutive sampling; or inadequate sample sizes were used, affecting reliability and generalizability.[5]

There have been 12 studies employing structured psychiatric interviews and specific diagnostic criteria to determine the prevalence of major depression in primary care.[5,8] Although the investigators administered three different structured psychiatric interviews (the DIS,[9] PSE,[10] and SADS[11]) in four different countries (the United States, Great Britain, The Netherlands, and Canada), the studies generated remarkably similar findings. The point prevalence in major depression was found to range from 4.8 to 8.6 percent across instruments and countries.

Prevalence of Anxiety

Zung has demonstrated that approximately nine percent of people in the community and 32 percent of patients seeking medical care from primary care physicians score in the pathological anxiety range (defined as a score of greater 45 on the Zung self-rating anxiety scale). In recent years, several studies have specifically assessed the prevalence of panic disorder in the general population. These studies have estimated that 1.6 to 2.9 percent of women and 0.4 to 1.7 percent of men suffer from panic disorder.[13] Moreover, a larger percentage of people in the community (3.6 to 10 percent) suffer from infrequent panic attacks.[13] Patients with infrequent panic attacks have been found to score higher on measures of anxiety and depression than the general population, and also are more likely to have family members with anxiety disorder than people who have never suffered from an anxiety attack.[13]

There have been four studies using structured psychiatric interviews measuring the prevalence of panic disorder within the primary care population.[14-17] Three of the studies found that 6.5 to 8 percent of primary care patients met criteria for panic disorder. Lower estimates of prevalence of panic disorder were found in the fourth study, which utilized the Diagnostic Interview Schedule in a large primary care epidemiologic study of predominately middle-aged to geriatric-aged internal medicine patients.[17] This fourth study determined that the prevalence of panic disorder in primary care was 1.4 percent.

In the general population, the lifetime prevalence of substance abuse disorder, according to the NIMH Epidemiologic Catchment Area Study, was 15 to 18 percent, with 12 to 16 percent abusing alcohol and five to six percent other drugs.[3] One-month prevalence data revealed that 6.3 percent of men and 1.6 percent of women suffered from substance abuse and five percent of men and 0.9 percent of women from alcohol abuse.[18] As seen in Table 1, recent studies of the prevalence of alcohol abuse in patients in primary care have determined that 8.7 to 17 percent of males and 0.9 to 4 percent of females meet criteria for alcohol abuse.[19-23] Several studies have also found that problem drinkers, when compared to a matched primary care control group, had a significantly higher prevalence of traumatic injuries, digestive disorders and family or social dysfunction.[24] Emergency room populations have been found to have an even higher prevalence of alcohol abuse, with 27 percent of males and eight percent of females found to suffer from this disorder.[21]

Health Care Utilization, Mental Illness and Substance Abuse

Studies of patients with mental illness in primary care have shown that these patients use about twice as much non-psychiatric medical care as patients without medical illness.[25] Thus, patients with mental illness are over-represented among utilizers of clinical services over a one-year period. Several recent studies have also focused on the psychiatric epidemiology of adult and geriatric populations of high-utilizers of primary care. These studies have demonstrated that high users of medical care have more chronic medical illness and psychological distress than low users of medical services.[26,27]

In a recently reported large health maintenance organization study, when pregnant women and patients with terminal illness were excluded, over half of the 767 high utilizers studied scored high on one or more measures of psychological distress.[27] The high utilizers in this HMO study represented 10 percent of patients in two large primary care clinics, but used 29 percent of all outpatient primary care visits, 52 percent of outpatient specialty visits, 48 percent of all inpatient hospital days, and 26 percent of all prescriptions over a one-year period. The most common mental illness found when these patients were interviewed with a structured psychiatric interview was major depression, with approximately two-thirds of the patients suffering from recurring, relapsing major depressive illness. As seen in Table 2, the anxiety disorders, somatization disorder and alcohol abuse were also very common in this population of high-utilizers.

Recent data from the Epidemiologic Catchment Area Study have also confirmed the tendency for patients with mental illness in the community to utilize significantly more general medical services, as well as mental health services.[28] In this study, patients with panic disorder and somatization disorder had the highest number of medical visits compared with controls without psychiatric illness; however, patients with major depression, phobias, alcohol and drug abuse also had significantly higher utilization of medical services.[28] When patients in the community were studied for high utilization, which was defined as six or more visits for general medical services over a six-month period, which was above the 90th percentile, patients with somatization disorder (males 3.3, females 2.5), panic disorder (males 8.2, females 5.2), major depression (1.5 and 3.4), phobias (2.7 and 1.6), alcohol (1.6 and 1.6) and drug abuse (1.8 and 1.2) again had the highest odds ratio for the use of any general medical services.[28]

Somatization

Somatic symptoms are exceedingly common in the general population. The Epidemiologic Catchment Area Study showed a high lifetime prevalence for symptoms such as joint pain (37 percent), back pain (32 percent), headache (25 percent), fatigue (25 percent), chest pain (25 percent), abdominal pain (24 percent), and dizziness (23 percent).[29] The significance of these symptoms was demonstrated by the fact that over 80 percent of the time these symptoms had either triggered a visit to a health care professional, prompted the taking of medication, or substantially changed normal activities.[29]

Recent studies of patients with the above minor somatic symptoms have reported that only about 10 percent were found to have a medical disorder that explains these symptoms over the course of a one-year period.[29] What has been astoundingly unappreciated is the link between common somatic symptoms and psychological distress in general, and psychiatric and substance abuse disorders in particular. Studies utilizing scales measuring psychological distress have consistently shown that patients with more distress also report that they suffer from two to three times as many somatic symptoms on a medical review of systems.[30] Data from the Epidemiologic Catchment Area Study have also demonstrated that virtually all psychiatric and substance abuse disorders were associated with increased somatic symptom reporting.[32,33] Among the ECA respondents who reported five or more current medically unexplained somatic symptoms, 63 percent reported current psychological symptoms and 50 percent met criteria for a current psychiatric disorder, compared to seven percent and six percent among those with no current somatic symptoms.[31] Panic disorder (204), schizophrenia (90.2), mania (24), major depression (17), and phobia (12.1) had the highest odds ratio of being associated with five or more current medically unexplained somatic symptoms. Recent studies of patients with panic disorder and major depression have also found that successful treatment is associated with a reduction in minor somatic symptom reporting.[31,32]

At the University of Washington, the Division of Consultation-Liaison Psychiatry has also been studying patients with unexplained physical symptoms, such as chronic pain or fatigue, in order to understand the psychiatric illnesses associated with these symptoms. Several similar methodological steps were followed in most of these studies. In these studies (except the initial study of inpatients with chronic back pain), patients with one aversive complaint were compared to a medical control group with a well-defined medical disease or problem.[34] For example, patients with chest pain and angiographic studies revealing no coronary artery disease were compared to patients with chest pain and evidence of coronary artery disease by angiography. Patients in these studies all underwent similar medical diagnostic testing. This testing usually separated patients into those with a well-defined illness and those with medically unexplained complaints. Thus, a thorough gastrointestinal workup in patients with abdominal pain differentiated patients into a subgroup with inflammatory bowel disease and a subgroup with irritable bowel disease. Finally, in all these studies, we utilized a structured psychiatric interview, the National Institute of Mental Health Diagnostic Interview Schedule.[9] This interview has high interrater reliability and is based on DSM-III criteria.

Table 3 demonstrates the similarities in findings in this group of studies.[34] In each case patients with these medically unexplained symptoms had a significantly higher prevalence of current and lifetime major depression when compared to medical controls. In several of the studies, other important psychosocial correlates were found. Thus, males with back pain had a high prevalence of alcohol abuse prior to the development of back pain.[35] Women with chronic pelvic pain were significantly more likely to have been a victim of childhood and adulthood sexual abuse compared to controls.[36] Patients with either non-cardiac-caused chest pain or irritable bowel syndrome were significantly more likely to meet DSM-III criteria for panic disorder (as well as generalized anxiety disorder in the IBS patients) than medical controls.[37,38] Patients with irritable bowel syndrome and chronic fatigue were also significantly more likely to meet DSM-III criteria for somatization disorder than medical controls.[37,39]

The main findings of these studies was that patients with medically unexplained somatic symptoms are significantly more likely than medical controls with a specific disease to have lifetime major depressive and anxiety disorders, multiple other medically unexplained somatic symptoms, and/or somatization disorder.[34] Most of these patients were high utilizers of medical care and had undergone extensive, costly and often invasive (e.g., angiography, laparoscopy) medical testing to investigate their symptoms.[40] Many of these patients had gradually developed extensive psychosocial disability and maladaptive illness behavior. Thus, many patients had given up significant household duties due to pain, had become more socially withdrawn, had become more distant and less sexually active with their significant others, had quit work or opted to work part-time.

In a later study, we combined four of these medical samples (back pain, pelvic pain, tinnitus, and fatigue) to study the interrelationship of depression with medically unexplained symptoms.[39] When patients with either a current or lifetime episode of depression were compared to medical controls without psychiatric illness, they had significantly more medically unexplained complaints over the course of their lifetime.

Research has also demonstrated that when psychiatric disorders and minor somatic symptoms such as chronic tinnitus, dizziness, irritable bowel syndrome (abdominal pain and intermittent diarrhea and constipation), and migraine headaches co-occur, the patient has significantly more functional disability (decrements in social and vocational function and poorer view of their physical health).[41-43] Co-morbid psychiatric disorders and minor somatic symptoms also have been shown to be associated with significantly higher health care utilization.

Somatization associated with anxiety, depression, and substance abuse disorders probably explains recent research demonstrating that patients with depressive symptoms and major depression have as much or more functional disability (decrements in vocational and social function, pain complaints, and a tendency of seeing their physical health as impaired) as patients with one of seven chronic medical illnesses (i.e., diabetes, hypertension, arthritis, coronary artery disease).[44-46] This research has also shown that patients with depressive symptoms or major depression who also have a co-morbid medical illness such as diabetes have equal and additive disability from these medical and psychiatric disorders. Two other recent studies have demonstrated that functional disability and depressive symptoms move synchronously together over a prospective period in patients with co-morbid medical and psychiatric illness.[47,48] Thus, as depressive symptoms decrease, decrements in social and vocational functioning tend to decrease, and the patient rates his global health status as improved. Initial studies have also demonstrated in a double-blind placebo-controlled trial that successful treatment of depression associated with medical illness with antidepressant medications leads to significant decreases in functional disability.[49,50]

Impediments to Accuracy of Mental Illness Diagnosis in Primary Care

Despite the high prevalence of mental and substance abuse disorders among primary care patients, and the association of these disorders with high medical utilization, somatization and functional disability, research studies have demonstrated that approximately one-third to one-half of patients are not accurately diagnosed by primary care physicians.[45,46] For instance, a study of 200 people who abused alcohol and had associated work impairment revealed that 74 percent had seen a doctor within a year's time.[51] Only 22 percent reported that their doctors warned them about the health risks of their alcohol abuse.

Several recent studies have convincingly shown that somatization is the key reason for misdiagnosis.[8,52] These studies interviewed primary care patients with structured psychiatric interviews prior to their assessment by their primary care physician. All studies found that over 90 percent of patients with a psychiatric disorder were correctly diagnosed when they presented with emotional symptoms such as anxiety, sadness, or crying spells. However, approximately 50 percent of patients with mental disorder who presented with a somatic symptom (such as headache, backache, or fatigue) or a symptom of their chronic medical illness (i.e., diabetes or heart disease) were not accurately diagnosed.[8,52]

Certainly, structural differences in primary care versus specialty mental health practice probably also influence accuracy of diagnosis. A primary care physician often sees 25 to 30 patients a day, spending 12 to 15 minutes per patient, whereas the mental health specialist often has 30 to 50 minutes per patient. Despite the advent of the biopsychosocial model, the primary care physician (and the patient) often feels his/her main job is to rule out serious medical illness, whereas in the mental health setting both clinician and patient focus from the first visit on psychological distress. There is also some evidence in primary care that it takes longer for the doctor to assess and treat a mental health problem versus a physical health problem.

Much of what the primary care physician sees are minor physical symptoms or illness such as headache, back pain or respiratory tract infections, which are treated symptomatically and probably would have subsided on their own. Thus, there is evidence that 60 percent of primary care visits are for illnesses or symptoms frequently seen in the community populations in people who do not seek medical help or advice.[53] The most common primary care diagnosis is no disorder.[54]

Although some of these common primary care symptoms such as depression or back pain become chronic and are associated with significant functional disability, it is difficult for the primary care physician to predict at the initial visit which of these symptoms are likely to resolve (with symptomatic or palliative treatment) and which herald a more significant chronic disorder. Because of this fact, "watchful waiting" has been a standard of treatment for medically unexplained symptoms for many years. In fact, until recent years, there was almost no research on predictors of chronicity or persistence of common primary care symptoms. Research in acute back pain and major depression in primary care are two exceptions, with at least a few research studies about predictors of chronicity or persistence completed.[5,55] However, this is still largely an uncharted area of research.

Another factor in the recognition and management of problems like depression, anxiety, and substance abuse in primary care is the lack of training in treatment and management of these disorders in primary care residency programs. Recent studies have demonstrated that internal medicine programs average a mean of two hours of psychiatric training in three years of residency.[54] Thus, despite the fact that patients with mental illness and substance abuse are estimated to represent 25 to 33 percent of all primary care visits and are over-represented among high utilizers of primary care, there is still little psychiatric training in internal medicine programs, especially academic internal medicine programs. This often results in lack of confidence and self-efficacy of the internist in recognition and treatment of mental disorders. Thus, the primary care physician feels that recognition may lead to frustration in management because of uncertainty about effective treatment and may not aggressively search for and recognize the disorders.

In family medicine training programs, a behavioral scientist is required to be part of every residency staff in order for that program to be board-certified. However, no criteria have been set regarding the type of degree the behavioral scientist must have, resulting in a diversity of professionals having been hired for these positions. For instance, some programs have anthropologists, others social workers, others psychologists, and a few psychiatrists. This has resulted in tremendous variability in the type of curriculum offered the primary care family medicine residents. In general, all primary care programs have shied away from block rotations on psychiatry as well.

Why has this lack of training in mental disorders and substance abuse occurred? Certainly this has occurred because of biases and stigma regarding mental illness among primary care residency programs that is similar to the stigma in the general population. It also stems from the doubts in primary care medicine about the capability of mental health professionals to treat these disorders. Unfortunately, these biases are still present despite tremendous advances in both biologic and psychotherapeutic methods of treating common mental and substance abuse disorders.

Another barrier to effective recognition and treatment is the lack of patient insurance to cover mental health versus medical treatment. A recent study demonstrated that doctors frequently code a mental health visit as a symptomatic complaint, such as headache or back pain, because of the better insurance coverage provided those diagnoses.[7] If a doctor wants to make a referral for psychotherapy, there are often limitations in the insurance coverage regarding mental health treatment. This is becoming increasingly prevalent today, with only short-term treatment, both inpatient and outpatient, covered by many programs. In addition, Medicaid and Medicare patients, as well as the uninsured, frequently cannot find providers to treat them, even with medical coupons or sliding fee scales. These same patients often find it easier to obtain treatment for a symptomatic complaint or chronic disease, which have better insurance coverage or for which they are willing to pay out-of-pocket.

Finally, for many patients who somatize, a change of diagnosis from chronic pain to depression, anxiety, or substance abuse may lead to loss of disability benefits. Many disability programs will cover patients more adequately for medical problems than for mental health problems, leading the patient to consciously or unconsciously resist mental health diagnosis and treatment.

Strategies to Increase Accurate Diagnosis of Mental Illness

The research finding that only about one-third to one-half of the patients with mental and substance abuse disorders are recognized in the primary care setting has led to strategies to improve recognition and management of disorders such as major depression in primary care. An evaluation strategy that has been implemented in the past is the administration of screening scales to identify high-risk patients with either mental disorder or substance abuse, followed by randomized feedback of these scales to the primary care physician.[55] These initial studies provided mixed results, with some showing increased recognition of disorders such as depression and substance abuse and initiation of treatment and others demonstrating negligible benefits.[55] Few studies, however, examine the benefits to the patient of increased recognition, and no studies have yet shown unambiguous positive patient benefits in screening for mental illness in primary care. Thus, although the results of randomized trials of feedback of measures of psychological distress to primary care physicians have suggested increased recognition,[58,59] and at least two of the studies have found increased prescribing of antidepressants,[57,58] the studies examining effects on patient distress have not shown decrements in anxiety or depression in intervention groups. One of the studies that looked quite closely at adequacy of dosage and duration of antidepressant treatment of primary care with randomized feedback found that only about a third of patients who were started on antidepressants as a result of randomized feedback by a consultation psychiatrist received adequate dosage and duration of treatment where feedback occurred.[57]

Adherence Problems in Primary Care Mental Health Treatments

The use of antidepressant medications was assessed through an automated data system at a large HMO in Seattle that encompasses approximately 18 primary care clinics in Western Washington State. Approximately half of patients who were prescribed an antidepressant stopped that medication within a one-month period.[57] This suggests that increased patient education and close follow-up are essential to adherence to mental health treatments. Our data also demonstrated that medications with fewer side effects were associated with better adherence. Thus, patients prescribed first-generation antidepressants (amitriptyline, doxepin, or imipramine) were somewhat less likely to maintain continued use of the initially prescribed medication over a six-month period than patients treated with second-generation agents (nortriptyline, desipramine) or new agents (trazodone, fluoxetine).[56]

Intensity of Follow-up

In specialty psychiatry care, patients with major depression are frequently followed at one- to two-week intervals when initially prescribed antidepressant medication. This close follow helps to alleviate concerns about side effects, reinforces to the patient that response to medication may take four to six weeks, and helps combat the feelings of hopelessness that patients with depression frequently have. Although there is little data on the subject, clinical experience suggests that primary care physicians see patients with depression who are initially prescribed antidepressants at longer intervals, i.e., two to four weeks. Data from a randomized trial of consultation-liaison psychiatry in primary care suggests that closer primary care physician follow-up leads to greater medication adherence.[57]

An important point to emphasize here is the difference between controlled trials in a specialty setting and the usual care in the primary care clinic. Patients selected for double-blind trials, such as trials of antidepressants versus placebo, are typically highly motivated for treatment, willing to accept placebo treatment, and are generally excluded if they have serious concurrent medical or psychiatric illness. However, patients in the primary care clinic with major depression often have concurrent medical illness, medically unexplained physical symptoms, and negative attitudes about psychiatric treatment. These may influence the ability of the primary care physician to provide effective treatment for depression, despite adequate diagnosis. Two studies, the Roper study[60] and the Cannel study,[61] have shown that patients still highly stigmatize treatment of mental illness. The Roper study found that only 12 percent of people surveyed stated they would be willing to take medication for depression and 14 percent for anxiety, compared to 65 percent for headache, 60 percent for a cold, 49 percent for stomach upset, and 25 percent for minor backache.[60] The 1977 Cannel study found that stigmatization about mental illness often leads to under-reporting of symptoms.[61] In interviews with respondents with known medical and psychiatric conditions, they found that 71 percent of asthma sufferers, 60 percent of patients with heart disease, 25 percent of patients with mental illness, and 22 percent of patients with genitourinary disease accurately reported their symptoms to the examiner. Both of these studies show that stigmatization of mental illness is still a problem, and that patient ambivalence about treatment may affect adherence in primary care.

An analogy to the difficulty in generalizing effectiveness of medications in double-blind trials for the primary care clinic may be drawn to hypertension. Double-blind studies in hypertension that showed benefits of treatment in decreasing patient morbidity and mortality were followed by disappointing results in implementing these treatments in the community.[62] A central problem was that patients often failed to use the medications appropriately, with as many as 50 percent not taking antihypertensive medication as prescribed.[62] These disappointing results have led to the development of studies that have aimed at increasing adherence to antihypertensive treatment. A variety of educational programs that work either directly with patients to increase their knowledge about antihypertensive treatment, or with physicians so that they would be better educators of primary care patients, did show effectiveness in increasing adherence and decreasing blood pressure significantly in patients with hypertension in the primary care setting.[62] There is only one controlled trial of information and education about benefits of tricyclic antidepressant treatment and potential side effects in patients with major depression, and this demonstrated better compliance in the patient education group versus a control group.[63] Adequate education of patients with major depression and their families is probably even more important in a condition such as depression that is highly stigmatized and frequently associated with patient ambivalence with diagnosis or treatment.

Conclusion

There is a high prevalence of anxiety, depressive, and substance abuse disorders in the primary care setting. Patients with these psychiatric disorders utilize significantly more medical care and tend to present to primary care physicians with common physical symptoms such as headache, back pain, or fatigue. Many of these patients undergo costly, invasive testing for these somatic symptoms because of inaccurate diagnosis of their underlying psychiatric disorder. Delay in diagnosis often prolongs patient suffering and may lead to increasing functional disability in patients' vocation and social lives. The unnecessary medical testing of these patients also may raise costs to the health care system.

Impediments to accurate diagnosis of psychiatric illness include physician time constraints, stigmatization of mental illness, patients' tendency to somatize, lack of training of primary care physicians in recognition and treatment of common mental disorders, and lack of available and affordable mental disorder treatment. Several research strategies to increase accurate diagnosis and effective treatment of common mental disorders are described, including psychiatric screening studies, psychiatric consultation liaison studies, and research focusing on adherence to psychopharmacologic treatments.

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Table 1: Alcohol Abuse in Primary Care

Author	Year	Number of Subjects	Interview or Screen	Prevalence of Alcohol Abuse		
				Male	Female	Total
King	1986	416 out of 451 approached (92%)	Interview - stan- > 8 drinks per day	13.6%	1.3%	5.0%
Wiseman et al.	1986	855 patients 2 declined	Interview and case and alcolmeter			13.9%
Perrson et al.	1987	2038	Multiple methods: SGGT level Patient & doctor questionnaire Psychiatric records Social welfare register Etoh > 10.0 mmol/L.	17%	4%	
Nicol et al.	1986	142	MAST	33%	4%	
Cleary et al.	1988	242 out of 347 approached (70 percent)	DIS MAST	37% lifetime	11% lifetime	5% current, 20% lifetime

Table 2: One month and lifetime DSM-III-R diagnoses of distressed high utilizers (N = 119)

	Current		Lifetime		Cumulative current	Cumulative lifetime
	n	%	n	%	%	%
Major depression	28	23.5	81	68.1	23.5	68.1
Dysthymic disorder	20	16.8	38	31.9	25.2	68.1
Panic disorder	14	11.8	26	21.8	30.2	71.5
Generalized anxiety disorder	28	21.8	48	40.3	39.5	75.7
Somatization disorder	24	20.2	24	20.2	49.6	78.3
Alcohol abuse/depression	6	5.0	29	24.3	52.1	83.3
No current or lifetime disorder	57	47.9	20	16.7	---	---

Table 3: Prevalence Rates of Major Depression as Related to Chronic Pain, Tinnitus and Fatigue

	Current Major Depression	Lifetime Major Depression	Number of Episodes	Associated Psychiatric and/or Medical Illness
Back pain	33%	57%	3	Alcoholism
Chest pain vs. controls	35% vs. 3%	64% vs. 16%	5	Panic disorder
Pelvic pain vs. controls	34% vs. 10%	66% vs. 16%	5	Substance abuse Sexual abuse
Tinnitus vs. controls	60% vs. 7%	75% vs. 15%	3.5	Mild sensorineural hearing loss
Fatigue vs. controls	15% vs. 3%	76.5% vs. 42%	2	Somatization disorder
Irritable bowel syndrome vs. controls	21% vs. 5.5%	61% vs. 17%	2.5	Panic disorder Somatization disorder

From Medical Care to Health Care: Can Primary Care be the Vehicle for Synthesizing Preventive Medicine, Health Promotion, and Public Health?

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Among U.S. health professionals there exists a high level of understanding of the public health model that relates human behavior and social circumstances to the root causes of poor health and that integrates new knowledge about the health determinants of factors from the genome to the environment. Examination of the way we organize our services, train our practitioners, allocate our resources in research, and finance the health needs of the American people leads to the inevitable conclusion that we have failed miserably in translating our knowledge into appropriate action. This paper will identify some of the reasons why the medical model has prevailed over the public health model and how primary care could become the vehicle for synthesizing preventive medicine, health promotion, and public health if it were to adopt a population approach to clinical care.

The medical model focuses on disease and its treatment rather than its prevention, on the pathogenesis of poor health rather than the promotion of good health. Even preventive medicine, developed within the medical model and housed in schools of medicine, has struggled to find a significant place in medical research, education, and practice despite the technical nature of immunizations, screening tests, and chemoprophylaxis (pharmacologic treatment to lower risk, i.e., aspirin to reduce cardiovascular risk).

Health promotion incorporates matters of personal behavior, culture, values, and law. The triumphs of modern medicine are the result of experimentation and reductionism, of the systematic attempt to remove all considerations of personal behavior, culture, and the like in order to understand biologic systems. These triumphs have been rewarded by a steady growth in resources for research to produce more diagnostic and therapeutic interventions and for payment to the specialists, sub-specialists, and institutions providing the interventions. Supply side forces are unfettered in the absence of a national policy attending to the broad health needs of the population and the root causes of premature morbidity and mortality. *Healthy People 2000* embodies three broad goals for the United States: to increase the average span of healthy life, to reduce the disparities in health among different groups of Americans, and to provide access to health services with health promotion and disease prevention programs for all Americans.[1] But these lofty goals are stated in the context of a failed national health policy that continues to ignore the need for a comprehensive population-based health system guaranteeing access to all members of our society.

More than 60 percent of all Americans who die each year are under the age of 65. According to data from the Centers for Disease Control, more than 12 million years of productive life were lost by Americans dying prematurely and health-damaging behaviors cause approximately three-quarters of these deaths.[2] Through early detection and intervention, comprehensive immunizations, and motivation to adopt health-promoting behavior we could postpone an estimated 45 percent of cardiovascular deaths, 23 percent of cancer deaths, and over 50 percent of the disabling complications of diabetes.[3] With better control of risk factors such as poor diet, inadequate exercise, the use of tobacco and drugs, the abuse of alcohol, unsafe driving, and a few others, we could prevent between 40 and 70 percent of all premature deaths. These impressive data are known to the community of health professionals, a group dedicated to postponing death and decreasing morbidity, yet our health system remains heavily skewed to the provision of curative services dependent on expensive technology and drugs. Attention is focussed on individuals *after* clinical signs of health-damaging behavior appear, on numerator rather than denominator data, on activities that reward the medical-industrial complex rather than preserve the health of populations.

The notion of primary prevention, that is, altering risk factors before they have even begun to influence human physiology in pre-clinical states, is something that most physicians do not recognize as part of their responsibility and still relegate to the domain of public health practitioners. The first public health revolution was carried out by the public health workers who gave us potable water, inspection of food to guard against contamination, and a safe sewage system and by the microbiologists and basic scientists who developed the vaccines that altered forever the capacity to protect the health of children. These triumphs, utilizing the population perspective, were accompanied by important discoveries and improvements in clinical medicine with its focus on the individual patient. Thus, the stage was set for the separation of the public health model from the practice of medicine to the lasting misfortune of the people we serve.

Shortly after World War II the declining mortality rates from infectious diseases intersected the rising mortality rates from the chronic diseases caused by the changes in behavior associated with industrialization--cardiovascular disorders, cancer, and unintended injuries. In other words, the United States underwent the health transition now occurring in many parts of the developing world. In many instances the agent responsible for death or disability had shifted from the microorganism to man himself and the vector from contaminated water supplies or insects to diets containing excessive amounts of fat, calories, and salt or the automobile and drugs. The relationship between human behavior and an increased risk for many chronic diseases was established. Awareness of the "new morbidity" produced the call for a second public health revolution.[3] This revolution will require clinicians to pay more attention to helping their patients adopt health-promoting behaviors and eliminate health-damaging ones, to counsel them to modify risk factors, to help them quit smoking, to help them initiate a modest exercise program, and to engage in safer sexual practices.

The counseling benefits will be measured many, many years later and long after patients have forgotten our involvement. The more immediate feedback provided by successful treatment of symptomatic disease reinforces the physician's interest in pathology and therapeutics rather than prevention or health promotion; the inability to alter the end stages of chronic disease may stimulate greater interest in prevention. Thus, we have within the profession itself powerful, contravening forces that make health promotion and preventive medicine challenging and almost impossible without the incentives and clarifying framework of a defined population for whose health the profession has accepted responsibility.

Health promotion services provided in the clinical setting are not the exclusive nor, by any means, the most effective way for physicians to help the American people modify their risk. Evidence from community-based interventions demonstrates that spot announcements on television, labeling of food products in grocery stores, health education programs in the schools, peer counseling programs by middle school students to teach them to say no to cigarette smoking, drug experimentation, and other habits have proved more effective in changing behavior than most interventions using a purely medical model. Again, these services or activities fall on the neglected demand-side or population-need side of the health equation. Except for scattered research or demonstration projects supported by government or foundations, these programs receive no funding within our current system of health care.

The medical model is better suited to secondary and tertiary prevention rather than health promotion. Early detection and treatment of hypertension contributed to the decline in mortality from strokes,[4,5] and similar screening for cervical dysplasia using the Papanicolaou test accounts for some of the sharp decline in mortality from cervical cancer during the past three decades.[6]

The lesson to be learned from the successes of community-based health promotion (primary prevention) and physician-provided screening and treatment (secondary and tertiary prevention) is that a combination of techniques is necessary for optimal effect, perhaps even synergism. By bringing health promotion into primary care settings and by involving more physicians and other health professionals in community-based programs, the medical expertise and authority of the physician can enhance the health promotion endeavor as well as reach patients during a teachable moment of acute illness. Studies of smoking cessation[7] and health education for improved hypertension control[8] have demonstrated the efficacy of physicians as health promoters. One recent study shows that physician health education for smoking cessation is as cost-effective as most other preventive services.[9]

To accomplish this synthesis of health promotion, preventive medicine, and public health in the clinical setting, the physician will have to provide the following services:

1. Counseling for behavior change in the context of the specific risk profile of the individual patient;

2. Screening tests to detect early, presymptomatic disease (mammography for breast cancer) or risk factors (hypertension or elevated cholesterol);

3. Immunizations and chemoprophylaxis;

4. Acceptance of responsibility for a defined population of patients to identify those public health services most appropriately delivered to groups of people; and

5. Information systems that will allow the incorporation of clinical epidemiologic data into the evaluation and modification of services to assure their appropriateness for the needs of the population being served.

The publication of the U.S. Preventive Services Task Force *Guide to Clinical Preventive Services* provides a blueprint for the delivery of these services.[10] The *Guide* evaluates the effectiveness of 169 health promotion and disease prevention interventions. The majority of the interventions are in the counseling domain, reflecting the importance of personal behavior in the etiology or amelioration of the 60 disease conditions and risk factors reviewed by the Task Force.

The influence of the *Guide* on physician behavior will be determined by the rate of diffusion of the recommendations into practice and the degree of physician adherence to them, recognizing that the above arguments about the distortions of the supply-side forces on the health system will hinder diffusion. Rather than targeting a narrowly-defined group to receive the recommendations, the entire population--with differing values and constraints for the many sub-groups within the population--must be defined as at risk.

Some recommendations, such as immunizations and screening tests, are more technical--and thus more consistent with the medical model--while the counseling recommendations emphasize behavior change and process--more consistent with the public health paradigm. These differences influence the rate of diffusion, shape the nature of the barriers to change, and should guide policy makers in planning for implementation. A number of barriers to diffusion of health promotion recommendations exist in practice, none more important than the disease orientation of clinicians, which adds psychologic and epistemological factors to the economic realities already described. The diagnostic and therapeutic tools of modern biomedicine capture our attention and the attention of the public, and when successfully applied, reinforce our interventionist behavior. Health promotion presents no "problem" for us to solve; the emphasis is on health, on non-events. Pels and associates describe health promotion as entailing

> "no dramatic surgical intervention, and the grateful patient is replaced by someone unlikely to credit, much less praise, the physician for improving the probability of a longer and better life. The feedback loop

> of positive reinforcement for clinical interventions is much shorter and more compelling than that for health promotion/disease prevention. Both physicians and patients tend to discount the value of a future gain when compared with the immediate cost of time, inconvenience, and discomfort experienced in regimented physical activity or in abstinence from tobacco, alcohol, or saturated fats."[11]

Among preventive services, those most closely resembling disease-treatment entities fare better. Self-reported information from the 1985 National Health Interview Survey showed that 85 percent of the 33,000 subjects had their blood pressures measured during the previous year and almost two-thirds of "everhypertensive" subjects were receiving treatment.[12] Less than half of the females, however, had their breasts examined during the previous year. Williams and associates reported that only 20 percent of high-risk populations receive yearly influenza vaccination.[13]

The low incidence of true positives for many screening tests requires the clinician to adopt the "denominator" thinking of population medicine and public health and resist the "numerator" thinking of individual patient care. A negative test is reassuring to the patient; repeated negative tests discourage the clinician.[14] Without a data system in place to record the patient numerator in the context of the practice denominator it is unlikely that preventive medicine and public health can be effectively performed in the primary care setting. Without reform of the health system to provide the policies and the funds to support practices built around the responsibility for "denominator" groups of patients, it will remain difficult or impossible for the second public health revolution to occur.

Reimbursement policies also discourage physicians from spending more time delivering health promotion services. Medicare, Blue Cross/Blue Shield, and commercial insurers offer, at best, partial coverage for some preventive services.[15] Several studies of physicians' attitudes toward health promotion cite insufficient reimbursement as an important impediment.[16,17] The RAND health insurance experiment showed that patients who received free care had more preventive services, although no group had adequate levels of care (57 percent of women 45-65 received a PAP smear, only two percent had a mammogram, and four percent of adults had adequate tetanus immunization).[18] Analysis of the 1982 National Health Interview Survey showed "reverse targeting" of preventive services with those at highest risk and uninsured receiving the fewest preventive services.[19]

A study of health maintenance organizations (HMO's) showed that the greater amount of preventive services provided to subscribers compared with those insured in the fee-for-service system could be attributed to better insurance coverage and not to the organization of HMO services.[20] Under the National Health Service, British physicians still concentrate their efforts on those who seek their attention and largely ignore those members of their panel who do not.[21] Thus, creating a payment system that does not discriminate against preventive services may improve the integration of clinical and health promotion services but will not be sufficient.

Several studies report that physicians lack confidence in their ability to motivate behavioral change in their patients and believe that they are poorly trained to practice preventive medicine.[16,22] The physicians' self-assessment reflects the reality that most medical schools and residency programs have offered minimal education in preventive medicine and population based health care. The public health model is largely ignored under our current incentives for medical education. Despite these deficiencies in the educational system, confidence increased with level of training. Lack of confidence correlated with failure to attempt behavioral change in their patients and with early cessation of counseling when dealing with poorly motivated patients.[23]

Physicians report higher levels of health-promoting behavior than the average citizen.[24] White male physicians have an age-standardized death rate 75 percent of that for white men. The death rate of female physicians is 84 percent of population norms.[25] Much of the variance is explained by lower rates of cigarette smoking among physicians. Physicians with better personal health habits and with positive attitudes toward counseling are more likely to counsel their patients about smoking, alcohol, exercise, and weight.[26]

Constraints of the practice setting also interfere with health promotion. Lack of support services and the time pressures of busy primary care practices impede even the best intentions to deliver health promotion services.[16,27,28] Most practice organizations do not include health promotion among their top priorities and are unlikely to until the payment mechanisms level the playing field for the use of physicians' time.

The attitudes of the support staff are important to all aspects of practice function. If adoption of an expanded array of preventive and health promotion services is perceived as adding work and stress, the support staff is unlikely to facilitate the synthesis of the public health model with clinical practice.[26] If, however, the support staff see their responsibility for a defined population and adopt part of the prevention agenda as a gratifying expansion of their professional role, health promotion and preventive medicine activities will increase. Many practices do not have easy access to dieticians, smoking cessation groups, alcoholism counselors and other referral services that provide health promotion counseling and sustain the clinician's motivation. Health education materials may be of uneven quality or in short supply. Few record systems are designed to monitor health promotion practices or to provide reminders and logistic support based on the risk factor profile of the individual patient or, even less likely, the population being served.

As medical educators we have faith that health profession students and graduate clinicians can improve their health promotion skills, knowledge, and attitudes as a result of effective teaching and training. Unfortunately, few published studies document the educational model as an effective strategy to improve the integration of health promotion and preventive medicine with clinical medicine. Preliminary evaluations of a few curricula that integrate health promotion with basic science and clinical courses show some promise.[30] Haynes and colleagues reviewed 248 studies on continuing medical education (CME). Only 13 percent of the studies randomized subjects to study and control groups, three percent met *a priori* criteria for quality, and a mere three studies evaluated patient outcomes.[31] Regardless of the quality of study design very few CME studies evaluated health promotion education.

Three randomized trials of packaged educational materials produced mixed results. One showed that pre-exposure behavior predicted most of the post-exposure variance, implying that the intervention reinforced pre-existing dispositions to adhere to health promotion recommendations.[32] Another study used as controls the 57 percent of the subjects who did not use the educational materials (articles and audio and video cassettes) sent to them. Both users and controls had significant post-test improvements. Either secular change overwhelmed any intervention effect or some of the controls actually used the materials or were motivated simply by receiving them.[33] The third trial showed that both recipients of articles and controls improved the quality of care for common clinical problems of high interest. Only the intervention group showed improvement for topics of low interest.[34]

Concentrating CME efforts on respected colleagues in practice--"educational influentials"--improved physician management of rheumatoid arthritis and chronic obstructive pulmonary disease in the practice communities of these colleagues.[35,36] A descriptive study of a large HMO reported reduction of routine blood testing (1.5 fold reduction) and chest X-rays (5 fold reduction) following an intensive intervention that combined written materials, lectures, small group presentations, and discussions.[37] Intensively applied interventions to motivated clinicians appear to be the most effective use of CME. The use of this strategy to encourage physician adherence to health promotion recommendations such as those in the *Guide to Clinical Preventive Services* remains to be tested.

Since 1975 the National Institutes of Health (NIH) Consensus Development Program has stimulated dissemination of new health information. Results have been mixed. The 1980 conference on cervical cancer screening had little effect on PAP test use. Rates of Caesarian sections continued to increase during the five years after the conference in 1980 that called for limiting the use of this procedure.[38] The 1977 breast cancer screening conference, however, had a positive effect on directing mammography to higher risk older women.[39] Studies before and three years after the conference based on the Lipid Research Clinics Coronary Primary Prevention Trial demonstrated an increase in physician awareness of the importance of cholesterol, initiation of diet therapy, and prescription of cholestyramine.[40] Secular trends (and drug detail persons) may have contributed to these improvements since only half of surveyed physicians were aware of the consensus conference report.

Another strategy to narrow the gap between physicians' knowledge and attitudes about health promotion and preventive medicine and their actual practice is the provision of feedback on practice behavior. Feedback based on audits of physicians' records is limited to the physicians' own reports of tests ordered and advice given. Direct observations are needed to assess the quality of counseling skills and other health promotion activities, and few studies have been reported. Feedback alone produced significant improvement in one study of housestaff compliance with preventive services recommendations[41] but not in another.[42] Feedback about individual performance,[43,44] individual performance compared with peers,[45-48] and group performance[49] improved physician compliance with pre-established criteria. Common elements of these successful interventions are the use of individualized, specific, and timely feedback.

Patient symptoms drive much of physician practice behavior and focus attention on numerator data, resulting in an appropriate response by the physician to the immediate needs of the patient. The non-symptomatic needs are crowded out, and denominator data are not sought. Reminder systems have been developed to help the clinician attend to the patient's need for health promotion and preventive medicine services.

Most reminder systems in clinical practice are computer-based. First demonstrated at the Regenstrief Institute, computer reminders about abnormal test results and monitoring of drug side effects improved adherence to predetermined standards.[50,51] Other studies produced similar results for blood pressure screening,[52] cancer detection,[53,54] immunization,[55] and pre-natal care.[56] McDonald's hypothesis that the practice environment, rather than lack of knowledge, was the principal barrier to adherence to standards appears to be confirmed by these studies. The reminder systems improve performance but do not address deficiencies in knowledge or skills.

Data from the INSURE project suggests that paying physicians for health promotion and disease prevention services improves adherence to standards[57] in fee-for-service group practices but produces inconsistent changes in behavioral risk factors in an HMO setting.[58] The combination of educational interventions plus practice setting changes such as reminder systems or payment for preventive services produced positive changes in mammography and immunization rates in an internal medicine clinic. A study of hypertension control produced similar results in a fee-for-service setting[59] but not in an HMO.[60] Other controlled trials have produced conflicting results. A combined interventions trial in a Veterans Administration medical clinic showed no increase in preventive services compared with controls.[61] In contrast a similar study of housestaff in a medical clinic showed that a combined intervention produced significant improvement in adherence to standards and that this effect persisted in a second setting despite the discontinuation of the environmental cues.[62]

The shift in the burden of illness in the United States to chronic diseases, injuries, and sexually-transmitted diseases demands greater attention to health promotion, preventive medicine, and the public health model on the part of physicians. Many obstacles impede the process of encouraging physicians to counsel their patients to increase health-promoting behaviors and reduce health-damaging ones. Green and associates reviewed three categories of behavioral influence that apply to clinicians and preventive services--predisposing, enabling, and reinforcing factors.[63]

Predisposing factors include the knowledge and attitudes of physicians toward health promotion and disease prevention, their own personal health behaviors, confidence in their own ability to counsel, their beliefs about patients' interests in health promotion advice, and their belief in the public health model.

Enabling factors include competence to perform preventive services, adequate payment for rendering preventive services, a practice setting that is organized to facilitate counseling activities, sufficient time in the schedule to provide health promotion services, an efficient reminder system, and a coherent set of guidelines that are perceived as scientific and unambiguous.

Reinforcing factors include peer support, positive feedback from patients, evidence of intermediate results such as improved health behaviors among patients that are predictive of ultimate favorable outcomes, enhanced self-efficacy about fulfilling one's role as a healer, and working in a practice setting that has responsibility for a defined population.

An "educational diagnosis"[63] is necessary to develop the appropriate combination of education, training, modification of practice setting and reward system to bring about the desired change in physician behavior for the synthesis of primary care practice, health promotion, preventive medicine, and public health. The data suggest that a multifaceted approach to helping physicians expand their knowledge of preventive medicine and increase confidence in their counseling skills should be combined with a reminder-feedback system that is tailored to the practice setting and the organization of primary care practice around the needs of a defined population. These goals deserve our best effort because the potential benefit to the health of the American people is so great. While much about the determinants of human behavior remains to be learned through research, the urgency of the AIDS epidemic; the mounting toll from intended and unintended injuries; unwanted teenage pregnancies; and the health consequences of tobacco, alcohol, and other drugs demand that the traditional, supply-side driven American health system be replaced with one that is based on the health needs of the public,[1] the neglected demand-side of the equation. Patient-centered care that responds to all segments of the public, primary care practices linked to defined populations, epidemiologic data about the distribution of risk factors and disease, and financing that guarantees access to health care for everyone and that rewards prevention are all needed if we are to restore a proper balance between clinical medicine and public health.

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Fostering Primary Care: Will the Public Sector Create a Two-Tiered Health Care System for Those Who Can Pay and Those Who Cannot?

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Introduction

Health care reform has become an issue of pressing national concern. How to change a system in disarray, beset with soaring expenditures, gaps in coverage, and fragmentation in delivery has become a question of major focus of the 1992 presidential campaign. According to the latest data, at any one time, an estimated 36 million people or almost 14 percent of the population are without health insurance coverage.[1] Another 20 million have coverage that experts regard as inadequate.

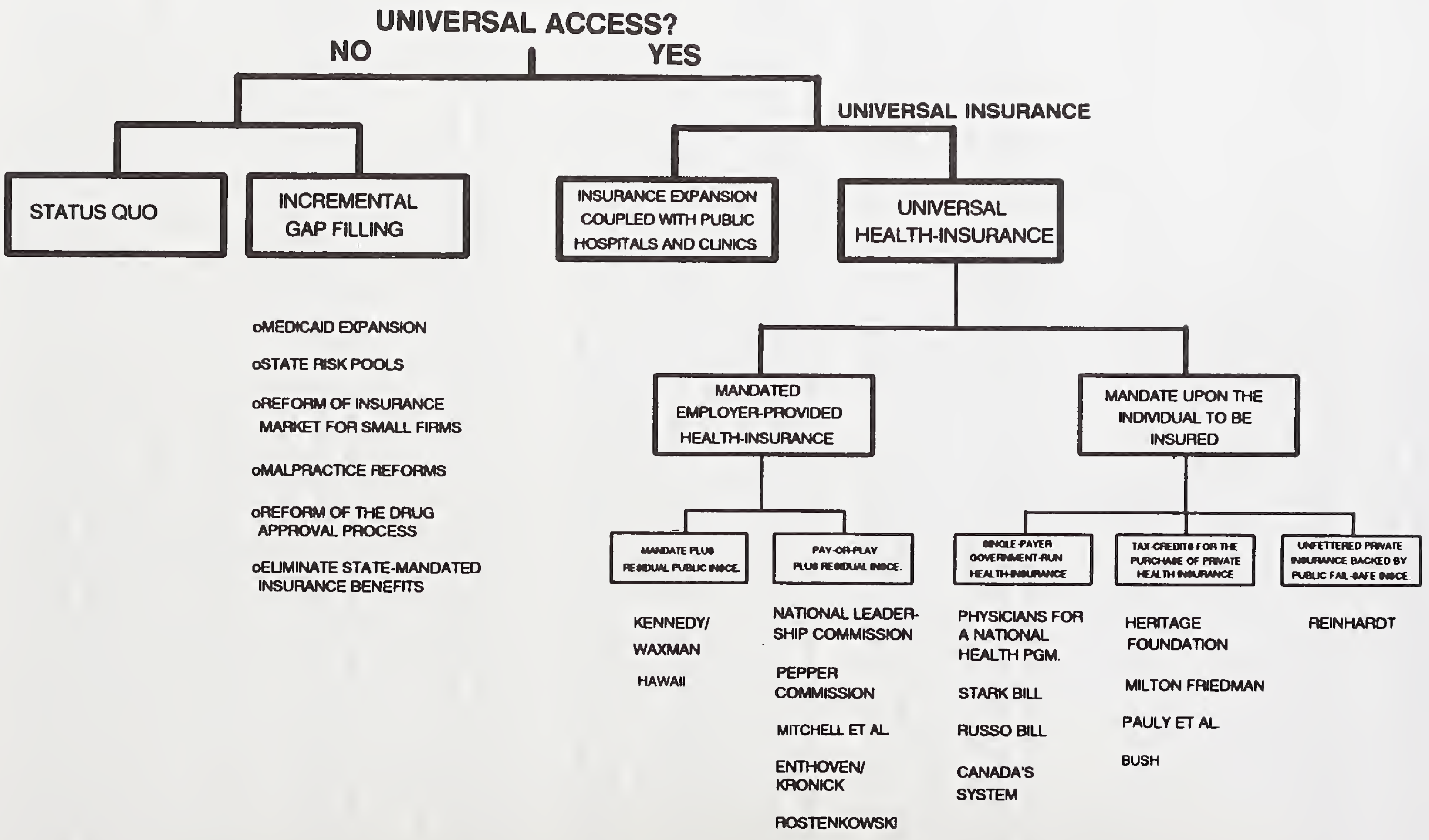
Whereas about 75 percent of Americans of working age receive their health insurance coverage through the workplace, not all those with jobs have access to insurance. More than three-fourths of the uninsured are working or live in families where at least one person is employed.[2] In many national polls and surveys, growing dissatisfaction with the Nation's health care system is being expressed from the perspective of all the major players: consumers, providers, and payers of care. As a result, the call for a health care reform program that would ensure universal access to at least a set of basic services is becoming more common and strident.

Developing the key direction and details of a health care reform package for the American people is likely to be a priority action item for Congress and the Administration in the coming years. To date, almost 30 proposals have been introduced ranging from fiddling with the status quo to the adoption of a government-run program similar to that of Canada (Figure 1). Large scale financing reforms aimed at increasing insurance coverage, however, do not automatically translate to improved and appropriate services. For example, public insurance programs for the poor, like Medicaid, have been chronically budget-constrained, resulting in inadequate system capacity and restricted eligibility. Low payment rates seriously limit provider participation and the scope of services covered.

Insurance alone cannot be the whole answer to providing accessible and affordable care. Nonfinancial barriers--demographic, language, cultural, racial, geographic, and organizational--have been shown to represent major impediments to health care for isolated and disadvantaged populations. Direct services such as transportation, outreach, and counseling can be critically important to adequate access, yet such

FIGURE 1

WHITHER AMERICAN HEALTH INSURANCE?


UNIVERSAL ACCESS?
NO
YES
UNIVERSAL INSURANCE
STATUS QUO
INCREMENTAL GAP FILLING
INSURANCE EXPANSION COUPLED WITH PUBLIC HOSPITALS AND CLINICS
UNIVERSAL HEALTH-INSURANCE
oMEDICAID EXPANSION
oSTATE RISK POOLS
oREFORM OF INSURANCE MARKET FOR SMALL FIRMS
oMALPRACTICE REFORMS
oREFORM OF THE DRUG APPROVAL PROCESS
oELIMINATE STATE-MANDATED INSURANCE BENEFITS
MANDATED EMPLOYER-PROVIDED HEALTH-INSURANCE
MANDATE UPON THE INDIVIDUAL TO BE INSURED
MANDATE PLUS RESIDUAL PUBLIC INSCE.
PAY-OR-PLAY PLUS RESIDUAL INSCE.
SINGLE-PAYER GOVERNMENT-RUN HEALTH-INSURANCE
TAX-CREDITS FOR THE PURCHASE OF PRIVATE HEALTH INSURANCE
UNFETTERED PRIVATE INSURANCE BACKED BY PUBLIC FAIL-SAFE INSCE.
KENNEDY/ WAXMAN
HAWAII
NATIONAL LEADERSHIP COMMISSION
PEPPER COMMISSION
MITCHELL ET AL.
ENTHOVEN/ KRONICK
ROSTENKOWSKI
PHYSICIANS FOR A NATIONAL HEALTH PGM.
STARK BILL
RUSSO BILL
CANADA'S SYSTEM
HERITAGE FOUNDATION
MILTON FRIEDMAN
PAULY ET AL.
BUSH
REINHARDT

SOURCE: Lewin-ICF and Uwe Reinhardt

services are rarely included as part of traditional insurance mechanisms. A goal of universal access to health care must go beyond increased financing and encompass significant structural and delivery improvements as well.

As this Nation searches for a new agenda, we face the political and social challenge of fashioning a health care system that adequately serves the haves and have-nots of a culturally diverse population. A critical question that remains is whether the new strategies will continue to perpetuate a multi-tiered system, split along socioeconomic status and ethnic lines. The answer to this question will depend on whether health care will be viewed as a merit good--a benefit society desires for all, with resources distributed on a reasonably equitable basis--or, as a private good, consumed according to individual preferences and ability to pay.

Many experts on health care services have expressed the view that attention to the appropriate role of primary care needs to be a major focus of strategies for health care reform, for two reasons. First, for those currently without insurance, or with limited insurance, access to primary care is often woefully inadequate, with resulting overutilization of emergency services and otherwise avoidable inpatient care. Second, virtually all of the reform proposals that deal with the need to increase economic discipline call for a stepped-up reliance on managed care and its use of primary care gatekeepers to ensure more efficient use of health care services.

The Current System

The Nation's health care budget is consuming an ever-greater share of national wealth. Health care expenditures in the United States, expected to reach $817 billion this year, are higher than any other nation by any measure. The financing and organization of our health care enterprise, with its incentives to overtreat and overtest, have contributed significantly to the current crisis over costs and access. Ultraspecialization has emerged as the primary index of value and competence in medicine. There is mounting evidence that a substantial percentage of procedures of care may be inappropriate and have little or no marginal benefit.[3] According to the American Medical Association (AMA), a significant portion of these unnecessary procedures, amounting to about $15 billion a year, may be the result of "defensive medicine," services performed to avoid malpractice suits.

Although the malpractice problem has been defined by increases in the number of claims and the size of payments and insurance premiums, it should be viewed primarily as a need to strengthen our quality assurance and medical guidelines mechanisms. The medical malpractice crisis, however, is having a direct impact on our efforts to improve access to health care for our most vulnerable citizens. A 1989 Institute of Medicine (IOM) study pointed out that the medical malpractice issue was most acute in the area of obstetrics. According to the IOM report, the number of obstetricians in nonmetropolitan areas declined by 20 percent between 1984 and 1989, denying many poor pregnant women access to even routine obstetrical services.[4]

It is a widely held view that the specialty mix of U.S. physicians currently contains too many specialists and too few generalists. An orientation toward specialty training has come to pervade medical education both at the undergraduate, graduate, and training level. According to a recent New England Journal of Medicine article, during the past decade the percentage of graduating seniors who planned careers in family practice, general internal medicine, or general pediatrics plummeted from nearly 40 percent to 25 percent.[5] By contrast, general practitioners make up 50 percent of Canadian and 70 percent of British physicians. The same article contends that value and career goals among medical students have focused away from public service to concerns about economic well being and a more predictable life style. The milieu of current medical education and the continuing erosion of our primary care infrastructure adversely affect our Nation's ability to provide basic care. We increasingly train "haute couture" providers and neglect commonplace needs.[6]

All the fractures and flaws of our private, "mainstream" health care enterprise are underscored and magnified in our public care system. Care for the poor and the disenfranchised tends to be uncoordinated, underfunded, and over-reliant on inappropriate tertiary care rather than on primary and preventive care. According to a Robert Wood Johnson Foundation study, 17 percent of the uninsured and 18 percent of those with public insurance state that their usual source of care is a hospital emergency room or outpatient department, compared to 8 percent of the insured.[7] It has long been evident that most physicians are reluctant to practice among the poor, the geographically isolated, and minorities. Recent studies of the health care system in the Nation's four largest metropolitan centers have revealed a 10-fold or even greater differential in the proportion of physicians to population between more affluent areas and low-income, minority neighborhoods.[8]

A 1988 study for the D.C. Hospital Association of hospitalized patients revealed that the uninsured are three times more likely to be hospitalized for a medically "preventable/avoidable" admission than are the privately insured or the Medicaid population. About 40 percent of the uninsured had avoidable admissions, compared with 21 percent for Medicaid recipients and 12 percent for other insured persons. Admissions were considered medically preventable had the patient received timely primary care and complied with medical advice. While the percentage of avoidable admissions was highest for the uninsured, the insured also had avoidable admissions, indicating that other factors apart from insurance influence the incidence of these conditions. [9]

While the availability of health insurance has been proven to enhance access, for vulnerable populations nonfinancial barriers can be equally and, in some cases, even more severe impediments to needed services. These include problems with transportation and child care, the practices and attitudes of some providers, language barriers, and cultural differences between patients and providers. A 1991 site visit by senior Washington health policy specialists to the Delta areas of Arkansas and Tennessee, a region confronted with high rates of poverty and poor health status, found that, in meeting the health needs of the population, basic services such as transportation, housing, water and sewer services, nutrition and social support, were as significant as providing access to physicians, nurses, and prescription drugs.[10] In many parts of the country, the maldistribution of health care resources can be directly linked to a legacy of poverty and racism that have resulted in serious disparities in health status, especially for blacks and Hispanics.[11]

Building Blocks for Enhancing Primary Care

In an effort to contain spiraling health care costs, a growing number of health care plans, both in the public and private sector, are placing more emphasis on managed care in the form of primary care gatekeepers. A major thrust of these programs is to change the incentives whereby doctors and hospitals provide more care than is needed and to maximize the value of health benefits, using an organized delivery system, utilization management, and financial controls. Most managed health care plans charge a flat per-person fee to cover all care required during the period of enrollment. A good number of prepaid plans, such as staff-model HMO's, put their providers on salaries, control referrals to high-priced specialists, scrutinize hospital admissions, and make sure that hospital stays are kept to a minimum. Plans like the Kaiser Permanente Medical Care Program, the Nation's largest HMO with more than 6.5 million members, and the Harvard Community Health Plan have been successful in controlling overall costs by strengthening the role and responsibilities of primary care physicians. On the State level, Hawaii's Basic Health Plan has been shown to be an effective private/public sector model for rationalizing the allocation of health care resources through enhanced primary care, greater use of nonphysician providers, and lower cost treatment settings.

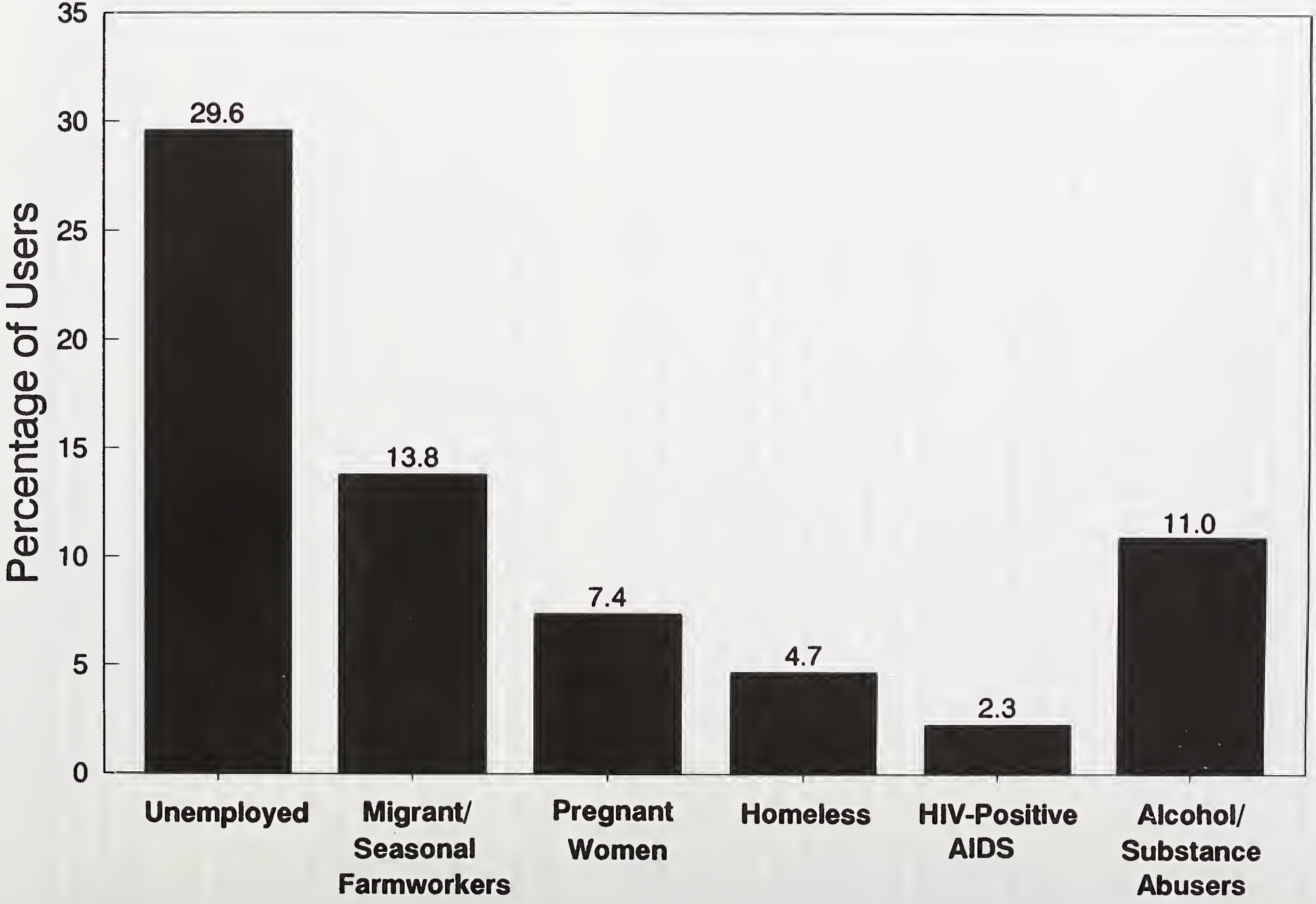
Although the publicly funded system is traditionally perceived as inadequate and second-rate, some of the best programs and initiatives addressing the comprehensive health care needs of disadvantaged populations are, in fact, funded by public dollars. These efforts, however, operate in a tenuous environment, burdened by a growing need for services, inadequate capacity, and competing demands for scarce dollars.

The Nation's community and migrant health centers (C/MHC's) and Health Care for the Homeless programs are the cornerstones of federally funded primary health care in the United States. They play a critical role in providing care for low-income families, otherwise isolated from medical care because of geographic, financial, or cultural barriers. In 1990 there were 547 federally funded C/MHC's, serving six million patients at 1,400 service sites. C/MHC's serve a disproportionate share of special populations and minorities[12] (Figure 2).

Community and migrant health centers receive financing from multiple sources. Approximately half of their support is in the form of direct Federal grants; some health centers, however, receive no Federal aid. The balance comes from patient fees (based on ability to pay), public and private insurance, and State, local or other

FIGURE 2

PERCENTAGE OF SPECIAL POPULATION PATIENTS SERVED BY C/MHCs



SOURCE: ZUVEKAS, LEWIN-ICF, 1991

contributions. In 1986, Medicaid accounted for only 15 percent of C/MHC revenues; this proportion is expected to rise with expanded eligibility for pregnant women and children and with implementation of the Federally Qualified Health Center (FQHC) legislation that mandates cost-based reimbursement for Medicaid and Medicare beneficiaries.

C/MHC's have had a successful track record in improving health status and access to services including prenatal care, immunizations, preventive services, and dental care. Several studies have documented the impact of health centers on reduced emergency room use, particularly for children. Hospitalization rates and lengths of stay are lower. Despite these significant contributions to improving access, however, C/MHC's reach only about one-seventh of the medically underserved.[13]

Health Care for the Homeless programs were established in 1986 through the Stewart B. McKinney Homeless Assistance Act to address the multiple unmet health and social service needs of America's growing homeless population. In 1990, McKinney Act Funds were given to 157 community-based organizations. These organizations are experimenting with a variety of practice and staffing patterns in an attempt to assure quality and continuity of care. Sustained funding, limited opportunities to refer patients for specialty and subspecialty care, and recruitment and retention of health care providers remain critical and unresolved factors in assuring the ongoing adequacy of these organizations[14] (Figures 3 & 4).

Concerns about access to primary care by the uninsured and underinsured have prompted Congress to strengthen the role of C/MHC's, federally funded Health Care for the Homeless programs, as well as health centers that could reasonably meet the requirements for C/MHC's as FQHC's. A key provision in the Omnibus Budget Reconciliation Act of 1989 is that FQHC's receive 100 percent reasonable cost reimbursement for a set of core and other ambulatory care services provided to Medicaid beneficiaries. The OBRA89 reform is expected to significantly increase Medicaid revenues flowing to C/MHC's.

Many C/MHC's are undertaking efforts to improve the coordination and integration of primary care by linking together various categorical programs in a more cost-appropriate, cost-effective manner.[15] Case-management/care coordination techniques are being used to improve the delivery of services to individuals and families, taking into account the cultural sensitivities and socioeconomic infrastructure of the community.

School-based health centers, established in over 30 States, have also shown potential to be effective mechanisms for expanding access to health and meeting the special needs of children and adolescents. One-quarter of the uninsured are under 18, and approximately 17 percent are school age children between the ages six and 18 (Figure 5). While there appears to be growing acceptance of the important part schools can play in expanding primary health care services and reaching vulnerable youths and

Figure 3

REASONS FOR SUCCESSFUL PHYSICIAN RECRUITMENT IN 75 CLINICS PROVIDING HEALTH CARE TO THE HOMELESS*

Reasons	% of Clinics
Support of the organization	97
Rewarding work	94
Malpractice insurance provided	75
Sufficient ancillary help	75
Good hours	75
Associated with residency or medical school	61
Good working conditions	49
Sufficient medical staff	47
Adequate salaries	42
Good neighborhood	36

*Only medical directors who reported no difficulties recruiting physicians were asked to respond to this question.

SOURCE: JAMA 2/5/92, Vol. 267, No. 5

Figure 4

OBSTACLES TO PHYSICIAN RECRUITMENT IN 82 CLINICS PROVIDING HEALTH CARE TO THE HOMELESS*

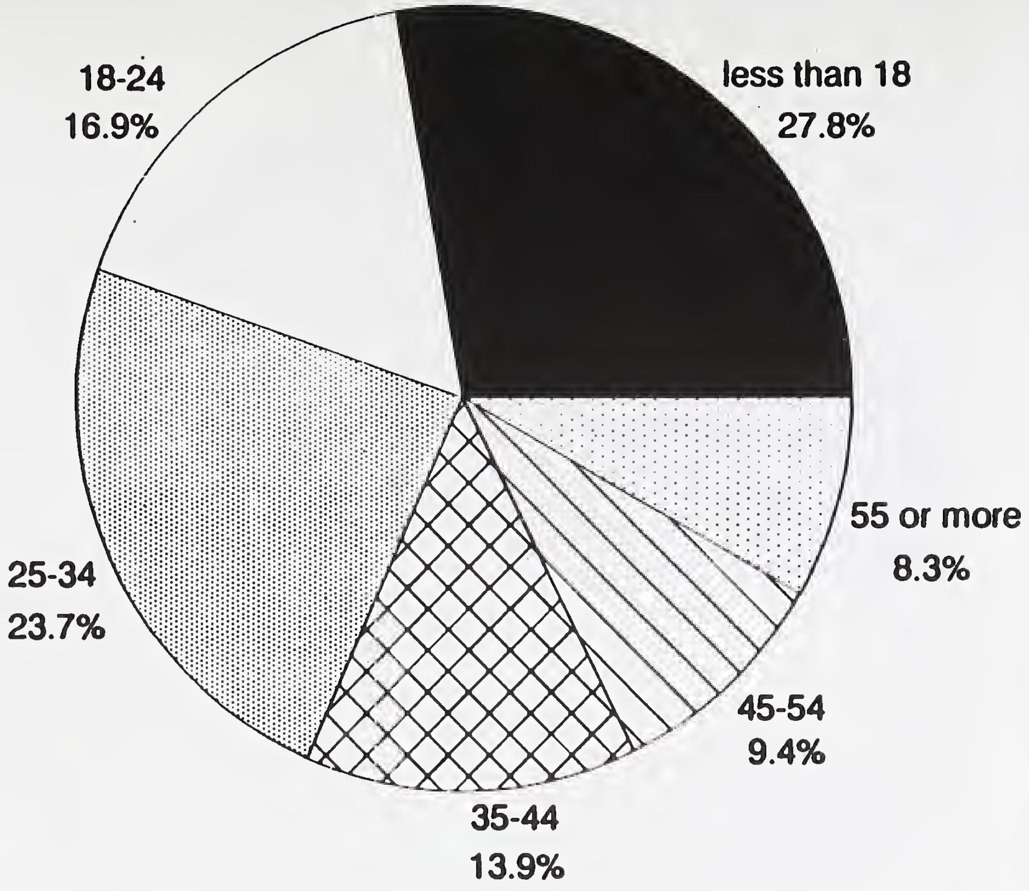
Reasons	% of Clinics
Inadequate salaries	78
Biases of physicians	63
Demanding workload	61
Work not respected by peers	54
Unsafe neighborhood	45
Poor working conditions	40
Insufficient ancillary staff	38
Insufficient medical staff	35
Fear of clinic violence	30
Excessive work hours	23
Lack of malpractice insurance	13

*Only medical directors who reported no difficulties recruiting physicians were asked to respond to this question.

SOURCE: JAMA 2/5/92, Vol. 267, No. 5

FIGURE 5

ABOUT 28 PERCENT OF UNINSURED ARE CHILDREN



Percent of All Uninsured

SOURCE: LEWIN-ICF Analysis of March 1990 Current Population Survey (CPS) Data their families, there is no consensus about the role of school-based services in a national health care reform strategy.

While safety net hospitals, emergency rooms, hospital-based clinics, and health departments have not proven to be optimal sites for the delivery of coordinated primary care, these entities continue to play a vital role in responding to the unmet needs of the medically indigent and underserved. According to the American Hospital Association's most recent estimates, in 1990, hospitals spent about $9 billion in unsponsored care.[16]

A major barrier for improving access to community-based, rather than tertiary-based primary care, has been due to what David R. Smith, M.D., newly appointed Commissioner of the Texas Department of Health describes, as the "involution" of health care--the migration of health services delivery from communities and populations at risk to centralized, technologically-based medical complexes and academic centers.[17] A number of leading urban-based medical centers like Johns Hopkins in Baltimore and Parkland Memorial Hospital in Dallas are attempting to respond more appropriately to the needs of their surrounding disadvantaged communities, putting in place integrated "user-friendly" community-based systems where primary care has an ascendent role. Further, such centers are beginning to use epidemiologic data to develop health outcome goals and process measures to address the priority health care needs of the larger community.

Health Professions Personnel Needs

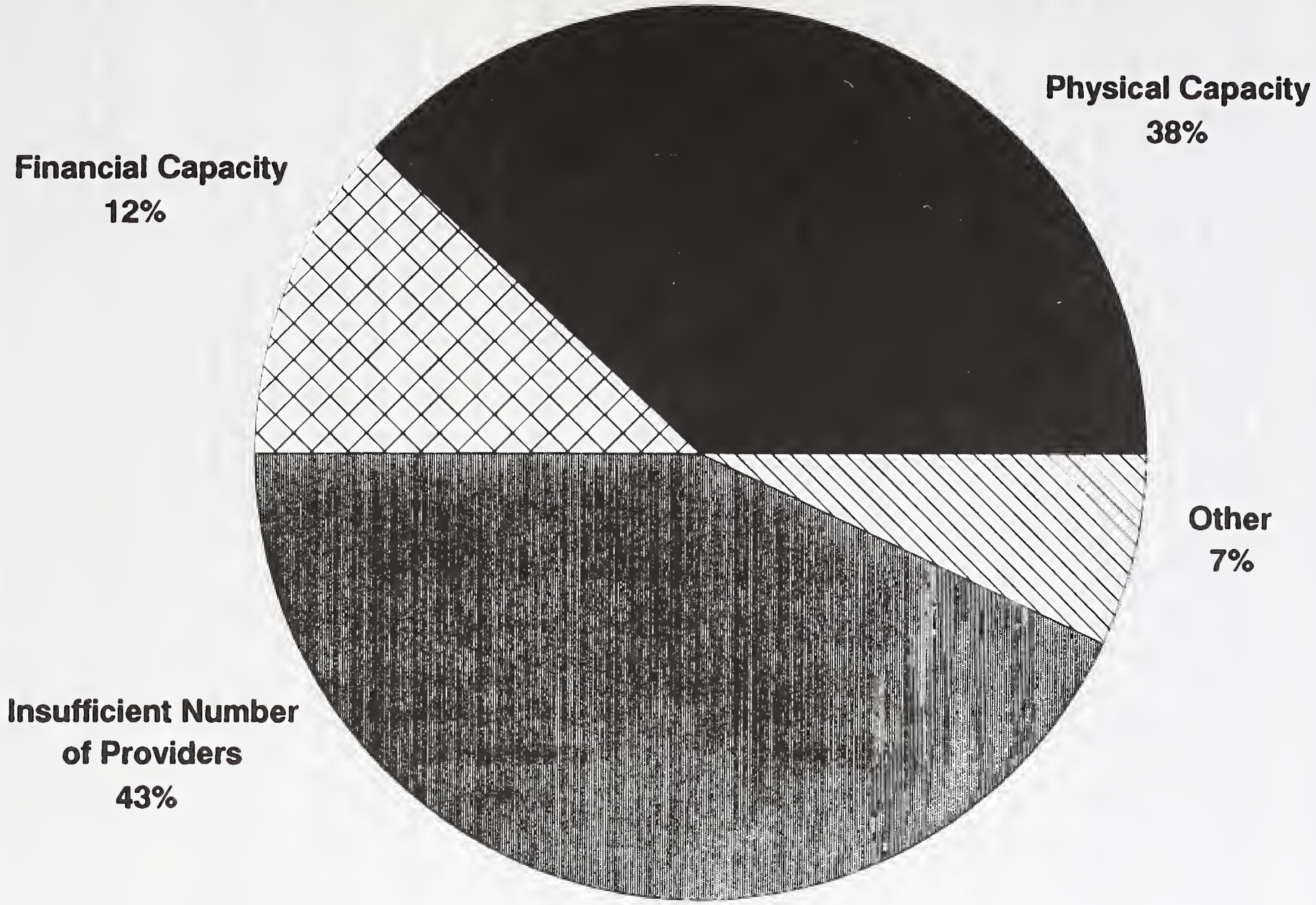
In looking at promising models for delivering primary care to underserved Americans, the issue of physician recruitment and retention appears to pose a challenge even greater than that of other restricted resources. For example, the most frequently raised concerns regarding the provision of rural health center on the shortage of health professionals, primarily physicians.[18] Only 12 percent of physicians practice in rural areas, where 25 percent of the Nation's population resides.

Clearly, every attempt must be made to increase the attractiveness of primary care as a professional calling and to provide incentives for primary care providers to seek placement in underserved areas (Figure 6). The National Health Service Corps (NHSC), was established in the early 1970's to target the placement of physicians in underserved areas. The NHSC awards scholarships and loan repayment in exchange for service. NHSC physicians frequently complete their service obligations in community and migrant health centers or other delivery settings that serve a disproportionate share of disadvantaged populations. After several years of retrenched funding, the NHSC is being revitalized in response to our Nation's access crisis.

Enhancing the participation of underrepresented minorities in the health professions must be another priority building block in our Nation's effort to develop a more

FIGURE 6

Reasons for Delays in Receiving Services in C/MHCs



SOURCE: ZUVEKAS, LEWIN-ICF, 1991

responsive and appropriate health care system. Although African Americans, Hispanics, and Native Americans make up about 20 percent of our population, they represent only eight percent of practicing physicians and one percent of medical school faculty. This imbalance hinders efforts to provide basic health care to all Americans since minority physicians are twice as likely as others to practice in the areas within the health professions in which there is a shortage.[19]

Some medical schools are establishing partnerships with State governments to obtain student loans, scholarships, and other financial incentives for students to enter generalist careers. But beyond financial incentives, it may be even more important for this Nation's academic health centers, responsible for the teaching and training of tomorrow's health care professionals, to place more value on the primary care track and give it "more respect."[20] According to Robert G. Petersdorf, M.D., president of the Association of American Medical Colleges (AAMC), this lack of respect not only is economic and academic but also pervades all of graduate medical education and, ultimately, medical practice.

A New Paradigm for Health Care Delivery

As we consider the prospects for primary care in our health care system, we need to differentiate between two models of primary care. The first is primary care as a health care delivery model focusing on early prevention and treatment, the provision of coordinated health services in lower cost settings, greater use of non-physician providers, and the capacity to respond to isolated and disadvantaged populations. These aspects of primary care are practiced principally in C/MHC's and other programs targeting low-income groups.

The second primary care model emphasizes the use of primary care gatekeepers largely as a means of containing costs by controlling the use of specialty referrals, inpatient care, and expensive tests and procedures.

In our efforts to improve this Nation's faltering health care system, one can envision an interesting and potentially productive convergence of these two models of primary care, as they relate to both the privately financed "mainstream" and publicly funded systems. Both systems acknowledge the importance of broadening the definition of health care to include a larger role for public health, primary care, prevention and behavior modification. With the broader applications of managed and coordinated care, both sectors see the need for improvements in determining standards of quality, monitoring those standards, and enforcing them.

As the mainstream sector attempts to move away from overspecialization and compartmentalization, it can learn from primary care infrastructures that have been most successfully placed in a number of publicly funded settings. The new reality is that the emerging major problems of the population--diseases and morbidity of aging;

poor pregnancy outcomes; behaviors resulting in self-imposed and societal risks--can best be dealt with in settings other than most university hospitals. Providers in both the public and private sectors will be required to address the needs of an increasingly heterogeneous population, seeking care in nontraditional settings, under more limited resources.

In the final analysis, whether the primary care system that evolves from health care reform is single- or multi-tiered depends on a number of factors. The most fundamental question is whether our national policy recognizes **basic** health services as a merit good or a private good. If the choice is to view it as a merit good, it is likely that differences in access and quality will be minimized. A more equitable financing system, however, will still require careful planning and sound management to ensure that the directly financed programs will continue to be available to address the special needs of hard-to-reach populations.

A second issue is the need to make primary care a more rewarding and attractive professional pursuit. Over the next several years, comprehensively trained primary care physicians, particularly board certified family physicians, will be intensely recruited by HMO's, private group practices, and other employers of physicians. This demand will significantly exceed the current and predicted supply of new family physicians. The ability of private sector group plans to offer attractive salaries and benefits will dramatically and negatively affect recruitment of primary care physicians to disadvantaged areas with physician shortages.

Finally, we must come to recognize, as experience in England and other nations has suggested, that access to primary care services may have little impact on health where resources for other, broader social services are relatively inadequate.[21] In this sense, the ideal primary care model may very well demand a two-tier system in which services for the disadvantaged may have to exceed those we provide our more fortunate citizens.

Thus, the impediment in capitalizing on the potential benefits of primary care--both health improving, and cost reducing--lie not in our knowledge of what to do, but in our willingness to make the requisite social policy decisions and financial investments. While there are encouraging signs to be found, we still face some difficult choices in the years ahead.

Acknowledgments

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How Have Other Countries Achieved Their Successes in Primary Care: A Predominately Canadian Perspective

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Introduction

As a participant in the evolution of primary care in Canada I welcome this opportunity to review our experience. In the 1960's a decreasing number of general practitioners without specific training provided primary medical care. Secondary care specialists in internal medicine, surgery, obstetrics and gynecology, and pediatrics were available as colleagues for consultations and referral. Sub-specialization, already well established in the United States, was just beginning in Canada. We felt that the future was uncertain.

The basic theme of this presentation is that the development of the discipline of Family Medicine in Canada has resulted in family physicians emerging as the primary care specialists, with traditional specialists functioning as consultants. Results, lessons learned, and challenges ahead will be described.

The Development of the Discipline of Family Medicine in Canada

Much that has been achieved in providing greater emphasis in primary care in Canada had its inception in the ferment of the 1960's.(1)

The classic 1961 paper by Dr. Kerr White and colleagues, "The Ecology of Medical Care," provided monthly prevalence estimates of illness in the community and the role of physicians, hospitals, and university medical centers in the provision of medical care.(2) An implication of Dr. White's findings is contained in a 1964 report on medical education in Canada, which commented that "medical students are taught almost entirely by specialists, in hospitals where complicated cases are concentrated, and where the major emphasis is on critical episodes of illness rather than on a long-term maintenance of health."(3)

At about the same time Dr. White noted certain discernable long-term trends in the patterns of practice in the United States with "the ratio of private practitioners, and particularly of general practitioners, to population declining steadily."(4)

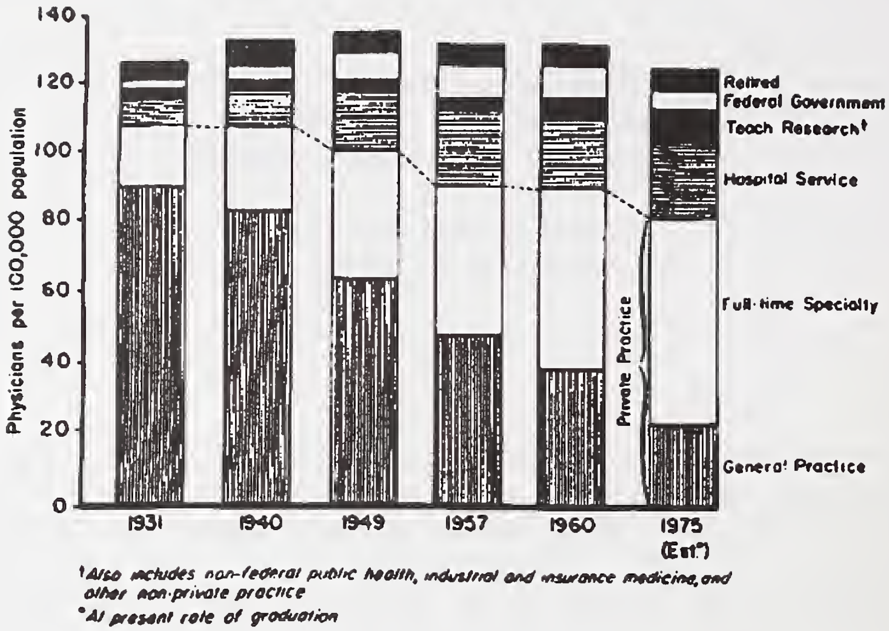

FIG. 1. Type of practice of physicians. (Adapted from Health Manpower Source Book Series (35), and estimates by Division of Public Health Methods, U.S. Public Health Service.)

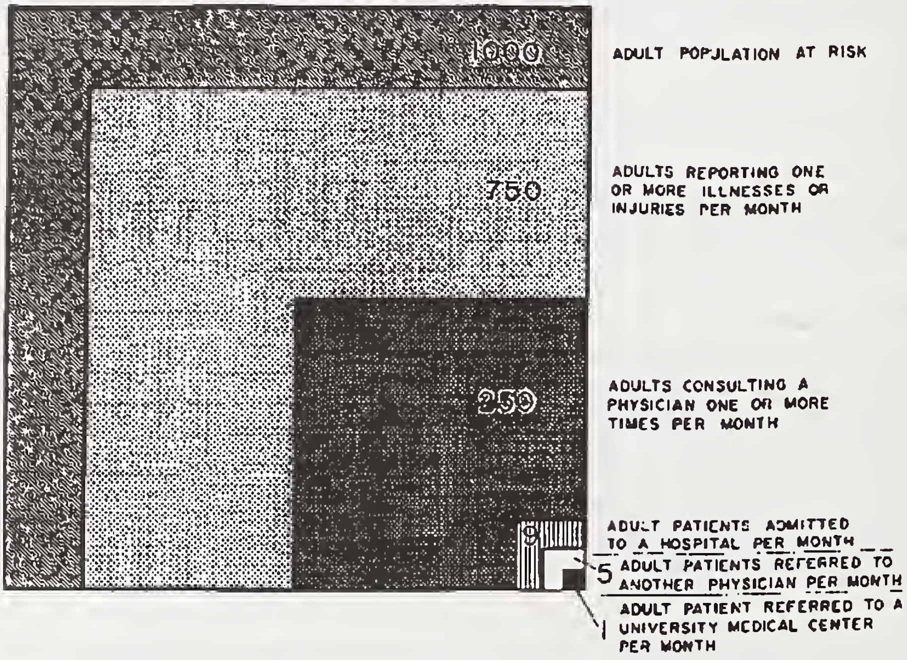

FIG.2
Monthly prevalence estimates of illness in the community and the role of physicians, hospitals, and university medical centers in the provision of medical care (adults sixteen years of age and over). (Source White et al.)

In a 1967 paper, "Family Practice: A Proposed Solution to the Problem of Meeting the Medical Needs of the Community," I identified the problem as:

> "A major task confronts the profession in trying to meet the medical needs of the community with the manpower available. Many factors have precipitated this crisis--an enlarging and aging population; increasing educational levels; the degree of sophistication pertaining to health and disease; increased wealth and medical care insurance; the knowledge explosion which has resulted in increasing specialization and fragmentation.
>
> An editorial in the September 1966 issue of Modern Medicine of Canada starkly outlines the dilemma.

YEAR	GENERAL PRACTITIONER	CERTIFIED SPECIALIST	TOTAL	CANADIAN POPULATION
1955	9,818	4,842	13,660	15,698,000
1965	10,221	9,423	19,644	19,440,000

> 94.6 percent increase in specialists
> 4.1 percent increase in general practitioners
> 18.0 percent increase in Canadian population
>
> To make matters worse, as far as first contact care is concerned, the specialty programs in medicine and pediatrics are being directed towards sub-specialization. This is necessary if the best care is to be provided using the latest knowledge; but the problem is in the perspective--no one is filling the void in the ranks of the declining number of first contact doctors."(5)

At the same time, Dr. Reg Perkin, now the Executive Director of the College of Family Physicians of Canada, commented that, "Undoubtedly the lack of undergraduate exposure to, and graduate training programs for, family practice has contributed to the decreasing number of students choosing family practice as a career."(6)

In 1963, Dr. Ken Clute published *The General Practitioner, A Study of Medical Education and Practice in Ontario and Nova Scotia.*(7) This study of 86 general practitioners found great variability in performance as had the 1956 United States study of 88 general practitioners in North Carolina by Dr. Osler Peterson.(8) Dr. Clute commented that, "It is our conclusion that the quality of a practitioner's work is the resultant of many influences, including factors in his undergraduate and postgraduate education, the conditions under which practice is carried out today, and, not least in importance, personal characteristics of the individual physician."

In the important 1964 Royal Commission report, *Medical Education in Canada*, Dr. MacFarlane, then the Dean of Medicine at the University of Toronto, stated that "A solution to the problem might be the development of a new type of family physician trained in those aspects of medicine which would prepare him best for his role of looking after the needs of the whole family, with help from consultant specialists when required."(9) The report recommended "That the College of General Practice, in consultation with the Association of Canadian Medical Colleges and the Royal College of Physicians and Surgeons of Canada, consider the development of a program of training and suitable examination for specialist personal physicians."(10)

The College of General Practice of Canada, which was established in 1954 as a voluntary educational and standard setting body for general practitioners, by 1962 had 2,400 members or about 25 percent of all Canadian general physicians.(11) In 1966, the College approved the first two residency training programs for Family Practice in Canada with the first specialty certification examination being held in 1969.(12)

In 1965, at a meeting sponsored by the Royal College of Physicians and Surgeons of Canada, the national standard setting body for specialists, it was agreed that the College of Family Physicians of Canada (formerly the College of General Practice) would be responsible for establishing standards for family practice, including the approval of training programs and the examination of candidates for specialty status recognition.(13,14)

In the 1960's, the impact of multiple factors, including increasing medical specialization and increasing uninsured medical costs, resulted in the 1964 Royal Commission on Health Services.(15) As noted in the foreword of the report, "There was no dissent to the view that some form of government action was needed to bring to all Canadians the best possible health care." In 1966, the Canadian Health Act set out five key principles of medicare; publicly administered, universal, portable, and comprehensive medical coverage accessible to all Canadians. While funding was largely from Federal taxation, administration was a provincial responsibility, but following national guidelines.

The following account about two patients from my practice, separated by a quarter of a century, will help to demonstrate the changes that have occurred.

In the late 1950's, a yardman on the railway in his 60's developed renal failure due to ureteral obstruction caused by an uncommon condition, retroperitoneal fibrosis. Despite surgical intervention to relocate the ureters, the patient's renal failure progressed, and he eventually died. With only insurance from his work to pay for his hospital and medical care, the benefits were soon exceeded because of the need for repeated hospitalization. His home was sold in order to pay the hospital bill.

By way of contrast, a very active woman in her 80's, the widow of a retired United Church minister, was able to die quietly at home last year--as requested. Two years earlier as a result of a feeling of fullness in the left cheek, a diagnosis of adenocarcinoma of the left maxillary sinus was confirmed by biopsy, following which she had irradiation at the regional cancer center as an outpatient. Last year, the tumor eroded through the maxilla into the mouth, nose and cheek. As her condition deteriorated, we were able to respect her request, thanks to an effective Home Care program, which provided a hospital bed in the apartment and daily visits by the home-visiting nurse attached to our health center. Diet changes were arranged by our nutritionist, and medical care was provided by either a resident on the team or myself. While the two daughters took turns looking after their mother, no costs to the family were incurred for the services provided.

In the intervening 25 years, the collaborative actions of government, organized medicine, and medical schools have resulted in the development of family physicians as primary care specialists, with traditional specialists functioning as consultants.

In 1967, when our department was established at the new medical school at McMaster, our first task was the establishment of a family medicine residency program. Four general practitioners relocated their practices to a family practice teaching unit located in a renovated wing of a community hospital. Rather than the one or two years of in-hospital training which each of us had obtained, the program combined appropriate in-hospital rotations with supervised ambulatory experience.(16,17) Specialty colleagues collaborated in planning and implementing the program for the first group of seven residents.

With increased emphasis upon family practice training and the decision at the national level that all postgraduate training would be based in medical schools, all 16 schools established Family Medicine residency programs over the next seven years. While the programs varied from school to school, all were required to meet the accreditation standards of the CFPC.

In order for the programs to be developed, financial support was necessary from the provincial ministries of health. By 1981, funded training positions were provided by government for 400 or one-quarter of the graduates of Canadian medical schools.

At the same time, traditional specialty training programs under the aegis of the Royal College of Physicians and Surgeons of Canada were increasing their emphasis upon sub-specialty training, e.g., cardiology, respirology, with the result that less emphasis was given to the preparation of generalists in medicine, pediatrics, and surgery.(18)

In the early 1980's, the Canadian Medical Association sponsored an in-depth review of Family Practice training in Canada. The report, named after the chairman, Dr. Larry Wilson, then the Dean of Medicine at Queen's University, recommended that more positions should be provided to enable all graduates entering family practice to obtain family practice residency training, that programs should be more responsive to the needs of the community, and that the national standard setting organizations should work more closely together with respect to the training of family physicians.(19) As a consequence of the report, the number of residency positions in family practice has been increasing. For example, the province of Quebec, in 1988, mandated formal training for all doctors entering family practice, doubling the number of residency positions in that province.

In 1991, as a result of extensive deliberations of all involved organizations at both the national and provincial levels, agreement was reached that, by 1993, all graduates of medical schools would require a minimum of two years of postgraduate residency training with the preferred routes being the programs approved by either the RCPS or the CFPC.(20)

Meanwhile, the CFPC, in response to the recommendations of the 1985 Curriculum Task Force Report has defined four central principles for residency training, for the certification examination, and for program accreditation.(21) The principles are the doctor-patient relationship, the effective clinician, the family physician as a resource to the practice, and the family physician in the context of the community. Annual workshops attended by College officials, program directors, and departmental chairpersons ensure full discussion of important issues.

At the level of our faculty, the director of family medicine residency training is accountable to the postgraduate dean for the program and collaborates with other program directors regarding the integration of their disciplines in the family medicine program. The family medicine program, with 80 residents, 38 in each of the two years, is the largest residency program in the faculty.

As was noted by Dr. Perkin, there was little opportunity in the 1960's for medical students to be involved with family physicians in the care of patients in the community. This has gradually changed in Canada, so that nearly all medical programs now have required clerkship rotations in family practice, as well as electives in the practices of community family physicians.

In Ontario, a current five-year ($6 million) project, EFPO, Educating Future Physicians for Ontario, jointly funded by a charitable organization, Associated Medical Services, and the Ministry of Health of the province, is supporting collaborative action for curriculum reform in medical education involving the five medical schools.(22) The intent is to better prepare students to be aware and responsive to the health needs of the population.

At McMaster, medical students are involved with full- and part-time department members for electives and the family medicine clerkship in community practices, as tutors in various parts of the program, resource people, student advisers, and program planners. The most frequently selected disciplines for postgraduate training by graduating students have been family medicine, followed by internal medicine and pediatrics.

Vital activities of all academic disciplines are scholarship and research. In the early years of family medicine in Canada research focused upon the definition of the discipline.(23) Dr. Ian McWhinney, the former chairman of family medicine at the University of Western Ontario, established standards for scholarship through his well reasoned and highly regarded writing about family medicine.(24) While originally the sciences relevant to family medicine were bits and pieces of other clinical specialties, clinical epidemiology has now become the accepted methodology for answering important clinical questions.(25)

While the practice patterns in Canada over the past 25 years have been built upon the role of the family doctor as the primary care physician and specialists as consultants, major changes in scope and patterns of practice have evolved.(26,27)

As in the United States, there has been in Canada increasing urbanization, an aging population with greater emphasis upon maintenance of function of patients with chronic disorders, more technology for diagnosis and treatment, a greater array of potent pharmaceuticals, and greater expectations from a better educated public.

Except in smaller communities that require general internists, pediatricians and surgeons, most consultants in urban centers are sub-specialists.

The basic tenets of the CFPC emphasize primary, continuing, comprehensive care for all family members.(28) However, with the increase in public expectations, there is need for greater collaboration with other health professionals. In contrast to the 1960's when our office staff consisted of nurses and receptionists, the community health center in which I now practice employs five family physicians, two nurse practitioners, a seconded home visiting nurse (VON) and public health nurse, a social worker, nutritionist, chiropodist, two physiotherapists, two community workers for a Spanish outreach program, a part-time psychologist, psychiatrist and quality assurance nurse, receptionists, aids, secretaries, bookkeeper, and two administrators. Eighteen family medicine residents are based at the center for the family practice and behavioral science portions of their training. The center has a rostered population of over 5,000 patients. We are involved in the care of our patients, whether in the community or in institutions.

As the scope of practice has extended to include the social and emotional aspects of care of individuals and families, the role of health professionals other than physicians has assumed greater importance. An example would be our involvement with a woman in her 60's with diabetic neuropathy and an abscess recently discharged from hospital. Her husband had just died from prostate cancer. In addition to her physical problems, the home visiting nurse, social worker, and family physician were faced with the woman's anger and insomnia (grief reaction), lack of money, housing problems, and family dysfunction. By working together the professionals assisted her through a most difficult life crisis.

In addition to being available for accidents and new illnesses, irrespective of cause, and the monitoring of long-term conditions such as diabetes, coronary artery disease, and malignancies, there is now an expectation that family physicians will be involved in health promotion and screening for disease prevention. This expectation has, in part, been stimulated by reports since 1979 of the National Task Force on Periodic Health Examination which bases its recommendations upon critical appraisal of published research.(29) One of the consequences of this expectation has been the need to develop a denominator dimension to the practice population. To implement this paradigm shift requires knowledge of effective screening interventions and an information system for recalling patients at appropriate intervals for periodic health examinations. Unfortunately, at this time too many unnecessary tests are being ordered, such as blood lipids, while beneficial tests, such as pap smears and mammograms for women in appropriate age groups, are not being done.(30,31)

An important but relatively recent initiative has been Quality Assurance of office practices. Two articles in the *Canadian Medical Association Journal*, one from the CFPC and one from the licensing body in Ontario, the College of Physicians and Surgeons of Ontario, each using different approaches, reported similar findings.(32,33) In the former study, Dr. Alex Borgiel and colleagues using explicit criteria in the analysis of 120 randomly selected family practices in Ontario noted that "generally the scores were significantly higher for CFPC members with residency training in family medicine than for those in other groups, non-members have the lowest scores." In my report about the Peer Assessment Program of the CPSO, 918 physicians identified by stratified random sampling in general/family practice and 11 specialty fields were assessed by practicing peers using implicit criteria between 1981 and 1985. Certificants of the two national standard setting bodies, the RCPS and the CFPC, had significantly less chance of failing to meet minimal standards for patient care and record keeping. For general/family physicians, three significant predictors of performance were found: age, CFPC membership status, and type of practice.

While the majority of primary care in Canada is provided in urban and suburban centers in the population belt adjacent to the United States, up to 25 percent is provided in smaller communities and remote areas, often in the northern part of the country. In these circumstances, family physicians must have greater technical capabilities and rely upon ground and air transport to move patients to larger communities for hospital management by specialists. In the far north, outpost nurses provide invaluable primary care services.

As a personal aside, last year our youngest daughter living in a small community in northwestern Ontario encountered fetal distress during a prolonged first stage of labor. Her family physician promptly arranged transportation by helicopter to Thunder Bay, where she had an uneventful delivery, and was back in Atikokan 24 hours later with her daughter, and a relieved husband and family.

Much has been written about the advantages and disadvantages of the Canadian medicare system from various perspectives.(34,35,36) A colleague, Dr. Bill Seidelman, has commented that primary care in Ontario "is best characterized as a huge, diverse, uneven, unorganized but powerful non-system providing effective health care in a structure determined, not by policy, but by market forces and personal (professional and consumer) preference."(37) For family physicians, the predominant payment mechanism is fee-for-service. Fewer physicians are involved in capitation arrangements (Health Service Organizations) and community health centers with program based budgets and salaried employees. Specialists, while also paid on a fee-for-service basis, only receive consultant rates when patients are referred to them, thus discouraging involvement in primary care.

While providing access for all medical services, increasing costs have resulted in steps being taken by provincial governments to curtail expenditures.(38) For example, in Ontario the health care budget for 1991 was 17 billion dollars, or one-third of the provincial budget, and has been growing at an annual rate of 11 percent to 12 percent. Physician payments account for $4 billion. Of this, $1.6 billion or 41 percent was paid for family physician services. Claims for services from the Ontario Health Insurance Plan (OHIP) have risen in frequency from 6.3 per resident in fiscal 1978/79, to 9.3 per resident in fiscal 1987/88. This is 55 percent higher than similar encounter information in the United States.(39) Recently, the new deputy minister of health for Ontario, Mr. Michael Dector, commented that "we can afford all the care that's necessary; we can't afford all the care that an entrepreneurial system produces."(40)

Results

Since 1965, approximately one-half of the physicians in Canada have been family physicians and one-half have been specialists.

Specialists and Family Physicians in Canada

	1965 Number (percent)	1977 Number (percent)	1986/87 Number (percent)
Specialists	9,423 (48.0)	17,206 (49.4)	22,093 (50.9)
Family Physicians	10,221 (52.0)	17,654 (50.6)	21,314 (49.1)
TOTAL	19,644 (100.0)	34,860 (100.0)	43,407 (100.0)

Of the 43,407 physicians in Canada in 1986/87, 21,314 (49.1 percent) were family physicians, 4,730 (10.9 percent) specialists or sub-specialists in internal medicine, 5,035 (11.6 percent) surgeons, 1,628 (3.7 percent) pediatricians, 2,792 (6.4 percent) psychiatrists and 1,352 (3.1 percent) specialists in obstetrics and gynecology.(41)

Of all family physicians in 1991, 11,500 (58.2 percent) were members of the CFPC, and of these 7,600 (66.1 percent) were certificants.(37) Since 1980 the number of certificants has more than doubled (1980: 3,596). Certificants are considered competent family physicians.(32,33)

While the number of specialists by year of MD degree in practice in 1986 exceeded the numbers of family physicians by year of MD degree from 1940 to 1975, an increase in the number of family physicians became apparent in the late 1960's. Since 1973 more graduates were family physicians than specialists.(41)

While not all of the medical graduates wanting to enter family practice residency programs can obtain positions, 681 funded first-year positions were available in 1990-91 and the number is increasing.(42) The following table displays the increase in positions over the past 20 years.

Family Medicine Residency Training Positions in Canada, 1971-1991

	1971	1981	1991
First year	20	394	681
Second year	20	400	672
Third year	20	25	38
TOTAL	**60(1)**	**819**	**1,391**

(1) estimate

70 percent increase in total number of positions between 1981 and 1991

Currently about 750 physicians take the certification examination of the CFPC each year.(42)

In 1986/87, there were 266 academic family physicians in Canada and over 1,000 part-time departmental members.(35) By 1992 there were 511 full-time and 2,018 part-time family physician faculty members.(43) At McMaster, there are currently 33 full-time and 127 part-time faculty in family medicine.

Over 90 percent of the Canadian people underscore their high level of satisfaction with their current system by expressing a preference to remain with it, while most Americans (89 percent) see the need for fundamental changes in the direction and structure of the U.S. health system.(44)

In 1989 the health spending to GDP (gross domestic product) rate was 8.7 percent for Canada and 11.8 percent for the United States.(45) These findings and other health indicators for 1989 were published in the "Survey of Health Care" in the July 1991 issue of *The Economist*.(46)

Health indicators, 1989

	Life expectancy at birth (years)		Infant mortality (per 1,000 live births)	Health spending as percent of GDP	10,000 population
	Male	Female			
Japan	75.9	81.8	1.6	6.7	16
Germany	71.8*	78.4*	7.5	8.2	30
United States	71.5	78.5	9.7	11.8	23
Britain	72.4*	78.1*	8.4	5.8	14
France	72.4	80.6	7.5	8.7	30
Canada	73.0*	79.8*	7.2*	8.7	22
Holland	73.7	80.0	6.8	8.3	24

* 1988 and 1986 Source: OECD

In a 1991 JAMA article, Dr. Barbara Starfield compared 10 western industrialized nations on the basis of three characteristics: the extent of their primary care services, their levels for 12 health indicators, and the satisfaction of their population in relation to overall cost of the system.(47) Canada, Sweden, and the Netherlands had generally high ratings for all three measures, while ratings for the United States were low. There was a general tendency for the three indicators to relate to each other. That is, where the primary care score was high, so were the satisfaction--expense index and the number of indicator conditions in the top third of the distribution.

Despite these findings there has been relatively little innovation in Canada to improve function, organization, and funding in primary care. By way of contrast, Finland has developed health centers that provide medical, dental, and social services for defined communes or communities. Home visiting nurses and midwives are well accepted. Health data about the population is an integral part of the system. Decisions about priorities for expenditures are made at the commune level. The primary care system in Sweden has many similarities. In both countries family physicians are employed by the health centers. While these systems have their advantages and disadvantages, there is value in considering such innovative approaches to meeting the needs of defined populations.

Lessons Learned

Three lessons can be learned from the Canadian experience in achieving greater emphasis upon primary care:

1. a population perspective was used in considering the physician needs of the community;

2. a collaborative system approach was developed involving medical schools, organized medicine, and government in responding to the identified needs; and

3. support and resources were provided for the development of strong university departments of family medicine.

Challenges Ahead

While much has been accomplished in primary care in Canada over the past 25 years, the following are challenges that will need to be addressed;

1. A management system that is more cost-effective. The Ontario Health Minister recently commented that "at least 25 to 30 percent of everything we currently do in the health care system 'has no proven value'."(48) On the other hand, initiatives of proven value are not being instituted. The role of the physician as manager needs to be integrated into training programs. Also required are on-line population based information systems.

2. Greater collaboration between family physicians and other health professionals. By working together as a health team it is possible to enhance the care provided in the community and reduce the need for hospitalization. Because this is not possible with fee-for-service remuneration of family physicians, alternate payment systems need to be encouraged.

3. Greater emphasis upon the academic aspects of family medicine. There is need for answers that can be provided by more rigorous operations research in the areas of diagnosis and treatment of common problems, screening and health promotion, and quality assurance.(49)

4. Distribution of physicians to meet population needs.

Summary

In summary, I have described the collaborative efforts of medical schools, organized medicine, and government in Canada over the past 25 years, which have resulted in family physicians emerging as primary care specialists, with traditional specialists functioning as consultants. Some of our future challenges have been identified.

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Is Emphasis on Primary Care Helping Us To Achieve the Objectives of More Patient-Centered Care?

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In this paper, I will examine the results of the Canadian emphasis on primary medical care, with particular reference to its successes and failures in attaining the objectives of accessibility, comprehensiveness, coordination, continuity, and accountability. I take these objectives to be important if a health care system is to be "patient-centered." The term "patient-centered" is also used to describe a particular kind of individual doctor-patient interaction. Since an interaction can be patient-centered in any field of medicine--primary, secondary, or tertiary--this usage of the term has no special relevance to the subject of this paper.

As well as using published sources, I will be drawing on my personal experience as Chairman of Family Medicine at The University of Western Ontario from 1968 to 1987, a position which involved me closely in the events that led to the present situation. Since 1987, I have been medical director of a palliative care unit, a position that has enabled me to observe how the health care system works for a particular group of patients--those in the advanced stages of cancer and other progressive diseases. I also served for several years on the Manpower Committee of the Council of Ontario Faculties of Medicine (COFM).

The Canadian System of Health Care and Medical Education

With the exception of some metropolitan areas, primary medical care in Canada traditionally has been provided by the general practitioner (GP). The exceptions are cities like Montreal and Winnipeg, where there has been a tradition of primary care by internists, pediatricians, and obstetricians. To some extent, these continue to be exceptions, although the numbers of physicians involved is small.

Up to the 1950's and 1960's, many GP's were complete generalists, practicing surgery and obstetrics as well as general medicine. Since then, increasing specialization has made GP surgery a thing of the past, except in a few rural areas, and the same trend is now visible in abnormal obstetrics and in anesthetics. In this, Canadian general practice has conformed with trends seen in other comparable countries.

Until the late 1960's, there was no postgraduate training in Canada designed for primary care physicians. Many GP's entered practice after a one-year rotating internship. Others arranged additional training according to their needs and interests.

By the 1960's, the number of graduates going into general practice had fallen substantially. General practice had suffered a loss of prestige. In the early 1960's, the recently founded College of Family Physicians asked Dr. Kenneth Clute to conduct a survey of general practice in Ontario and Nova Scotia. This was an early attempt to assess the quality of medical practice by defined criteria. Like the study conducted by Osler Peterson in the United States about the same time, it was highly critical of the standards of practice observed.[1,2]

Several initiatives were taken in the 1950's and 1960's to revive the status of general practice. Chief among these was the formation, in 1954, of the College of General Practice of Canada, later changing its name to the College of Family Physicians (CFPC). The College saw education as the key to the revival of general practice, and by 1966 had established two three-year pilot, postgraduate programs in collaboration with the Universities of Western Ontario and Calgary. It also planned an innovative certification examination in family medicine, the first of which was held in 1969. About the same time, some medical schools began to respond to changing societal needs. The first chair of Family Medicine was established at The University of Western Ontario in 1968. All 16 schools now have Departments of Family Medicine and all have residency programs in family medicine.

The CFPC has a key role in the training of family physicians. The College is the accrediting body for all family medicine residency programs and sets the certification examination taken by graduating residents and by 'practice-eligible' candidates who meet certain criteria. The Royal College of Physicians and Surgeons fulfills this role for all the specialties. With the exception of Emergency Medicine, none of the Royal College specialties have training programs designed for primary care. Medical schools are responsible for all postgraduate training. There are no free-standing residency programs.

The Coming of Medicare

In 1966, the Canada Health Act paved the way for universal medicare. Medical care and education are both provincial responsibilities, but the Federal Government was able to attain national standards of universality, comprehensiveness, and portability by means of transfer payments to the provinces. The transfer payments have been reduced in recent years, and the continuing ability of the Federal Government to enforce such universal standards has been called into question. Up to the present, however, publicly administered medical care has been available without charge to all citizens and paid for mainly out of general taxation. There are no user fees and physicians cannot bill for amounts greater than the medicare fee. The majority of family physicians are paid by fee-for-service, with some electing to be paid by capitation fee or, in community health centers, by salary. With very few exceptions, hospitals are funded by provincial governments. All 16 medical schools are funded by the provinces. There are no private universities.

How the System Sustained the Primary Care Sector

Since my experience has been in Ontario, I will use this province to illustrate how Canada has been able to maintain a strong primary care sector. Roughly similar developments have taken place in the other provinces. Ontario is the largest province, with a population of about nine million and five medical schools.

About the time when medicare was introduced, the Ontario government published guidelines for the Ontario medical schools. These said that 50 percent of graduates should go into primary medical practice. By and large, this objective has been attained. Since no medical school can dictate career choices to its students, the part medical schools played was necessarily limited. All five schools eventually established departments of family medicine and postgraduate training programs. Undergraduate curricula were reformed to give more emphasis to the family medicine clinical clerkship, which was pioneered in Canada. The government assisted by making direct grants for undergraduate education in primary care. In 1969, the government established Demonstration Model Grants for Health Care Research, which provided the funds for many innovative projects in primary care.

The main factors, however, in attaining the manpower objectives were the government's control of residency positions, medical immigration, and resource allocation. The control of resources made it relatively easy to limit medical manpower which depended on expensive technologies like cardiac and neurosurgery. At the time of writing, for example, Ontario has nine open heart surgery units for adults and three for children, 19 neurosurgery units, two lithotripsy machines, 55 CT scanners, and three MRI scanners. For most fields of medicine, manpower planning and the concomitant reallocation of residency positions have been a long process extended over many years.

Manpower Planning and Postgraduate Training

Although prepared to intervene directly, the Ontario government has preferred to provide medical schools with general guidelines and leave it to the schools to put their own house in order. In 1979, the government asked the Council of Ontario Faculties of Medicine (COFM) manpower committee to estimate manpower needs in all fields of medicine and to allocate postgraduate training positions accordingly. The government tried to limit its role to deciding the total allocation of funds to residency training and, occasionally, intervening to protect vulnerable priority disciplines. The committee established a working party for each field of medicine, with the assigned task of enumerating the physicians practicing in the field and quantifying any shortfall in requirements. For some fields--the smaller specialties--this was relatively simple. For general practice/family medicine, it was a major undertaking. The problem was that general practice and primary care were not synonymous. In the existing statistics, the category "GP" included all physicians who did not have a Royal College speciality qualification. It included, therefore, physicians working in public health, school medicine, occupational health, administration, and other fields not related to primary care. The working party for family medicine resolved this by counting only those physicians engaged in family practice. The 1980 base was judged to be an acceptable manpower position.

A shortfall in numbers in the specialties was identified rather crudely by asking communities how many unfilled positions they had for each specialty. There was no attempt to base manpower requirements on physician/population ratios. Future manpower requirements in each field were then calculated, taking into account any shortfall and natural wastage due to retirement. The number of residency positions in the specialty was then adjusted accordingly and the postgraduate education committee of C.O.F.M. allocated any cuts among the five schools.

The reaction to the cuts was predictably one of outrage. Strategies were devised for funding residents from earnings and other sources. The government responded by cutting one residency position for every one funded by private sources. For the established specialties, residency positions were gradually brought more into line with manpower needs. For general practice/family medicine, however, the situation was different. In 1970, there were hardly any residency positions for family medicine and, by 1980, not nearly enough for all those graduates entering family practice. How were more positions to be provided when the government was insisting that the postgraduate training establishment was already too large?

Postgraduate Training in Family Medicine

By the 1960's it had become clear to thoughtful members of the academic community as well as to the CFPC that a one-year rotating internship was not an adequate preparation for primary medical practice and, moreover, that the rotating internship--a superficial experience of hospital based specialties--was not an appropriate model for primary care education.

One would have thought that the benefits of postgraduate education for primary care were so obvious that it would be welcomed in the public interest by all professional organizations. In fact, it received very little support, and often outright opposition, from organized medicine, medical students' organizations, licensing bodies, the Royal College, and medical schools themselves. I believe the opposition came from those who saw the development as a threat to their own power and autonomy. Many existing GP's saw it as a reflection on the adequacy of their own education. Medical students saw it as a potential threat to their own freedom to practice after a one-year internship. Licensing bodies of the provinces were satisfied that licensure after a one-year internship was sufficient protection for the public. For existing specialties, the growth of family medicine was a threat to their own residency positions. Many of their academic leaders also had great difficulty in understanding that primary medical practice required a body of knowledge and skills as unique in their own way as those of any existing specialty.

To me, it was the lack of support from medical schools that was most disappointing. I had thought that institutions devoted to education would be crying from the rooftops about this need for educational reform. For the most part, they were silent. It was then that I learned that universities and medical schools do not serve the public interest. They serve their own interests, or at least the interests of their most powerful departments. I was naive to think otherwise. I am certain that, without the public interest represented by the Ontario government, the province would not have attained the system of primary care which, with all its faults, has given it such a solid base for its health care organization.

By 1984, attacks on family medicine programs had become so frequent that a national committee was established to visit each program and to report on the status of postgraduate training in family medicine. The committee was chaired by Dr. Laurence Wilson, Dean of Medicine at Queen's University, and had representatives from the Canadian Medical Association and provincial licensing bodies. The committee's report was very positive, and resulted in much greater acceptance of postgraduate training for family medicine.[3] Up to that time, the severest critics had rarely taken the trouble to come and see what the programs were actually doing. It was not well-informed criticism. In his report, Dr. Wilson contrasted the short (two year) duration of core training for family medicine with the minimum of four years for Royal College programs. He saw an inconsistency here: "Either family medicine training is too short, or specialty training is too long." This inconsistency still exists and is, as I will argue later, the source of some of the faults in the Canadian health care system.

The COFM Committee on Manpower made no attempt to expand family medicine training so that it could be available to all those entering primary care. It accepted without question an early guideline evolved as an interim position by the government. This guideline stated that 50 percent of graduates should go into primary care and that only half of those should receive training beyond the one-year internship. Only in 1991 were family medicine programs in Ontario able, with government funding, to take all graduates going into primary care. By this time, the expectation was that 40 percent would enter this field.

The core training requirement remains at two years. Satisfactory completion of a College-accredited program entitles a candidate to sit the College's certification examination. In 1991, 641 residency-eligible candidates in Canada took the exam and 596 passed. By 1991, 10,000 candidates had written the examination. A small number of third-year positions are available for residents who wish to take additional training beyond certification. The choice of two years as the core training was the College's own. The original three-year requirement was reduced to two in 1971 in a controversial decision taken under considerable political pressure.

Primary Care Physicians in Canada 1989

According to the Ministry of National Health and Welfare there were, in 1989, 27,164 GP's and 24,150 specialists in Canada.[4] This produces a GP/population ratio of 1:973. For reasons already stated, this ratio over-estimates the number of family/primary care physicians. In 1986, when the Ministry reported 23,533 GP's, the College of Family Physicians maintained that only 19,772 were in family practice.[5]

In 1989, 1,725 physicians graduated from Canadian medical schools. There were 634 residents in the first year of family medicine residency programs and 1,132 in the first year of specialty programs. About 50 percent of family medicine trainees were female--the highest percentage of female residents in any field of medicine.[6]

Clearly, large numbers of Canadian graduates are continuing to choose primary care. Whether or not graduates are choosing primary care from a strong sense of vocation is another question. The short training program, and earlier opportunity to become licensed and earn a substantial income, make the family medicine route an easy option. I will argue later that this may, in the long run, have a deleterious effect on the status of family medicine, and therefore of primary care in the Canadian health care system.

Using projections of retirees from practice in the 20 years from 1986, Watanabe has shown that, assuming that the production of family physicians was maintained at the 1986 level, the primary care establishment of 45 to 50 percent would be maintained for the next 20 years.[7] A larger number of specialty residency positions will be needed because some specialties will soon be experiencing shortages due to large numbers of retirees. Family physicians, on the other hand, are much younger on the average, and will not be experiencing a retirement "bulge" for two decades. These calculations, however, do not take into account the larger number of women graduates entering family medicine. The available evidence suggests that women physicians have a practice work load 25 percent less than that of male physicians. Nor did it consider the increased demands on family physicians of an aging population.

The Position in 1992

The most recent development is a consensus among provincial licensing bodies* that two years postgraduate training will be the minimum requirement for a general license.[8] This is likely to be in effect for all graduates by 1995. To obtain a license, trainees will also have to pass a new qualifying examination set by the Medical Council of Canada during their second year of training. For those in family medicine programs, this examination will come in the same year as the CFPC's certification exam. Successful completion of both these examinations should ensure portability of the license to all provinces except Quebec, which is setting its own qualifying examination.

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* The provincial Colleges of Physicians and Surgeons - not to be confused with the Royal College of Physicians and Surgeons or the College of Family Physicians.

Medical school graduates will have three choices: a residency in a Royal College specialty, a residency in family medicine or, in those provinces which offer it, a two-year general residency administered by a medical school. Graduates doing the general residency will not be eligible for certification and this may affect the portability of their license. Medical students are also foreseeing a time when provincial governments may be unwilling to fund enough residency positions to license all graduates. At present, this seems unlikely, but it does raise the possibility that possession of an M.D. may no longer be a guarantee of a career in clinical medicine.

Although Canada has successfully maintained its stock of primary care physicians, it would be wrong to conclude that all the problems have been solved. A recent article in the *Canadian Medical Association Journal* on medical resource policies listed a number of key problems: failure to control entry of foreign medical graduates, inadequate control of postgraduate training positions, the role and funding of medical schools, poor geographic distribution of physicians (a serious surplus of GP's in urban centers), and the distorting effect of fee-for-service remuneration.[9]

The Urban-Rural Imbalance

Although the primary care sector has been successfully maintained, all provinces with the possible exception of the smallest (Prince Edward Island), have experienced difficulty in attracting enough physicians to rural areas and to the more isolated towns. Governments have used a variety of measures, including both incentives and disincentives. Ontario has provided both capital grants and guaranteed minimum incomes. It has also recently established two Northern Ontario residency programs, both affiliated with medical schools. Some provinces have eased immigration restrictions for physicians willing to work in areas of need. Quebec has introduced a differential fee structure for urban and rural areas. In British Columbia, there was a period when no new licenses were granted in the Vancouver area.

Successes and Failures of Canadian Primary Care

Let me now review the results of all these efforts. How patient-centered is Canadian primary care, when assessed by the five criteria of accessibility, comprehensiveness, coordination, continuity, and accountability?

1. **Accessibility.** Virtually all Canadians have access to a personal physician who can care for all members of a family. The majority are able to identify a family physician as "their doctor." For those who do not identify a personal doctor--chiefly young males--the decision not to have a personal physician is their own. For different reasons, some groups may find it more difficult to find a personal doctor: the destitute, vagrants, substance abusers, the homeless. Even these are often served by government funded community health centers. People living in small rural communities may find access

more difficult, in spite of incentive programs to encourage physicians to practice in rural areas.

The personal accessibility of family physicians by their regular patients is another question. In urban areas it is now a common practice to use large deputizing services after 5:00 p.m. on weekdays and on Saturdays and Sundays. The patient then sees a doctor he does not know, who does not know his regular doctor, and who does not have access to his medical record. Commercially operated walk-in clinics have sprung up in many urban areas, often staffed by part-time speciality residents with little or no training in primary care. All this signifies a tendency of primary care physicians to be less accessible to their patients out of office hours. The responsibility for this, however, does not rest only with physicians. Walk-in clinics are also used by patients in practices offering a 24-hour availability.

2. **Comprehensiveness.** Family physicians in Canada do provide a very comprehensive service. Specialization within family practice--by age group or by problem--has not occurred in any formal sense. A patient can be assured that, whatever the problem, he or she will not be refused care. As they always have done, practices do vary with the age, sex, and interests of the physician. We have not, however, seen the development of many pediatric, geriatric, or women patients only practices. Physicians who do not offer prenatal care or in-hospital care (a tendency in larger cities) will refer patients to appropriate specialists or to a family physician colleague. Failure to offer home care is a more serious limitation, because there may be no alternative source of medical care. The frequency of this problem is difficult to know. In the large cities it is probably common. In my own city (population 300,000) nearly all family physicians visit patients at home.

3. **Coordination.** Lack of coordination is one of the major defects of the Canadian system of primary care. Coordination between family physicians on the one hand, and community nursing and social services on the other, is poor. For home care, for example, the Ontario government provides resources for nursing, homemaking, social work, physiotherapy, and occupational therapy, all coordinated by case managers. Because family physicians are private practitioners, paid usually by fee-for-services, they do not fit well into this management structure. Their services are required for medical assessments and the writing of prescriptions, but in practice the home care team often functions with the family physician as a very marginal performer. This is not helped by a payment system that does not reward the physician for being a team member, attending team meetings, communicating with case managers and nurses, etc.

   There are, of course, exceptions to the lack of coordination I describe. There are health centers where physicians work as members of a primary care team;

there are "hospital at home" projects, notably the one in New Brunswick. The situation I describe is, however, the more usual one, at least in Ontario.

4. **Continuity.** The evidence we have indicates that patients remain with the same physician for long periods of time. A study in 32 Southwestern Ontario practices showed an attrition rate over five years of nine percent in males between 40 and 65 and 12 percent in females of the same age.[10] Since younger adults move their domicile much more frequently, the attrition rates in this age group were higher. A study of single mothers in Ontario showed that the family physician was one of the most important sources of continuing support.[11]

   In other respects, continuity of care by the same physician is less satisfactory. As already mentioned, it is a widespread practice in urban areas for family physicians to sign out to commercial deputizing services out of office hours. Breaks of continuity also tend to occur when patients with chronic disease are referred to the secondary and tertiary care sectors for specialized care. Patients may be taken over by the secondary sector and lose touch with their family physicians.[12] This is responsible for many problems of the health care system. For example, a patient may manage quite well without their family physician until they reach the terminal stages of their illness and are unable to leave home. Since the secondary and tertiary care physicians cannot visit the home, the patient is suddenly deprived of medical attention. I have seen this happen many times in patients with advanced cancer.

   Another problem is the greater difficulty of providing continuity of care in the secondary and tertiary sectors of the system. If the family physician is relegated to the sidelines, the connecting link may be lost. I was recently asked to see a patient with lung cancer and spine metastases. He was on a rehabilitation service and had, in quick succession, been in the care of a respirologist, thoracic surgeon, radio-therapist, and neurosurgeon (for spinal decompression). His first question to me was "Who is my doctor?".

   Family physicians have expressed dissatisfaction with this aspect of the health care system, but lack the confidence to be more assertive. We are all members of a society that values technology more highly than personal care. Specialists have more prestige than generalists. Why else would a society tolerate a training period for generalists that is half that of the narrowest specialist? It is not surprising that family physicians feel diffident in challenging the system. This has implications for the quality of care and for its cost. While working in palliative care I have found myself, on many occasions, questioning investigations, therapies, or follow-up practices which I felt to be redundant or overzealous. This is an important role for the generalist in the health care system, a role well articulated by Pellegrino:

> "All physicians perform some aspect of the generalist function at some stage of their encounter with a patient. Only the generalist, however, does so in the whole range of clinical possibilities. The generalist is distinguished, therefore, not by being the only one to perform the generalist function but by the personal responsibility for acting across the boundaries between clinical categories and over the whole spectrum of needs.
>
> Generalists must, therefore, co-ordinate and manage the input of specialists and other health professionals, they must deal in an orderly fashion with multiple problems, they must make the confusing whole into an intelligible situation for the patient and his family, and they must assume personal responsibility to protect the patient's interests in what is often an overwhelming array of treatments, recommendations, and techniques. The generalist must explain the relative importance and priorities of what can be contradictory recommendations offered by the specialists. He has a particularly difficult moral responsibility to protect the patient from the overzealous espousal of the consultant's preferred technique, to the exclusion of other equally viable alternatives."[13]

In filling this role myself as a palliative care physician, I have felt that I was doing something that the family physician should have been doing. So often, the family physician was not there. This alienation of the family physician--the failure to accord him or her the full status as generalist--is, I believe, a serious defect in the Canadian system. Its effects are seen in the ever rising costs of multi-specialty care.

5. **Accountability.** Physicians are accountable to the provincial health insurance plan for providing a service that is in accordance with the schedule of fees. They are accountable to their patients for the quality of the service provided and patients who feel that this has been inadequate may complain to the provincial College of Physicians and Surgeons or have recourse to the legal system. In hospitals, physicians are accountable to the hospital organization for the quality of the care they provide. These levels of accountability are no different from those in any health care system.

   There is no accountability for those aspects of care that are key aspects of primary care: accessibility and continuity. Some family physicians have answering machines out of office hours that instruct patients to go to the nearest emergency department. Some family physicians refuse to do home visits. Family physicians are under no obligation to explain to new patients the range of services they offer. Accountability for primary care is therefore lacking in the Canadian system. One result is a good deal of confusion on the part of the public. It is difficult for them to know what they can reasonably expect from their family physician. For the system to be truly patient-centered, we need a set of national standards for family practice services, and a way of ensuring accountability for the standard of service provided.

Summary

Primary medical care in Canada is provided mainly by family physicians. Between 40 and 50 percent of Canadian medical graduates enter family practice, the majority of them after a two-year residency accredited by the College of Family Physicians.

The present balance between family physicians and specialists has been attained by government control of residency positions, medical immigration, and specialized technologies.

Primary medical care is accessible to virtually the whole population, although accessibility of personal physicians (outside office hours) may be limited by the use of large deputizing services.

The service provided by family physicians is comprehensive in that it is available to all age groups for any health problem. Many family physicians do not do obstetrics. Most do have visits, but commitment to home care is variable.

Coordination between primary and secondary care sectors, and between family physicians and community services, is frequently a problem. Patients referred to specialized services are often retained by the secondary care system and lose touch with their family physicians.

With the exceptions cited above, the majority of the population experience continuity of care from their family physician. Family physicians are not accountable for their accessibility, or for the continuity and comprehensiveness of the service they provide.

Acknowledgments

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Generalists and Specialists: In Search of a Better Working Relationship

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Southern California Permanente Medical Group

Introduction

Kaiser Permanente of Southern California is at the beginning of a process designed to restructure its health care delivery and administrative systems. As a response to the organization's strategic objectives to become the employer of choice in health care and to develop the ability to demonstrate value in a climate of increased competition, we are planning:

1. Establish Member Initiated Care Unit (MICU); integrated teams of providers who will render services initiated by Health Plan members. The teams will be accountable for cost, health care team satisfaction, member and purchaser satisfaction, and health and clinical outcomes of a defined health plan membership.

   Services provided outside the MICU are to be coordinated so that clinicians and other specialists are accountable to meet the criteria established by the MICU clinician. These are seen to include the cost of the care, timeliness of the service, patient satisfaction, and clinical outcomes.

   The MICU is to assist our organization to become member and purchaser oriented. In addition, it is our desire that this structural change will change the relationship between primary care physicians and specialists.

2. Create subregions within the organization in which existing Medical Center Service Areas are clustered into subregional business units that facilitate resource sharing.

Background

Kaiser Permanente is a group practice prepayment plan providing comprehensive medical and hospital services to more than 6.6 million members in 12 Regions across the United States. The plan evolved from industrial health care programs for construction, shipyard, and steel mill workers in the Kaiser industrial companies during the late 1930's and 1940's. It was opened to public enrollment in 1945.

The current structure dates to the mid-1950's, when Kaiser Permanente was organized into the Kaiser Foundation Health Plan, Inc., Kaiser Foundation Hospitals, and a separate and independent Permanente Medical Group in each Region. Each

Permanente Medical Group is responsible for providing and arranging the medical care necessary to satisfy Health Plan's contracts with groups and individuals in its Region. The medical groups recruit their own physicians and develop their own staffing patterns. They are responsible for providing or arranging for all medical services for Kaiser Permanente members in the Region and for ensuring the quality of those services. Some Permanente Medical Groups employ and supervise allied health and administrative personnel.

The Southern California Permanente Medical Group is a partnership of a little over 1,900 physicians, with a total of approximately 3,000 full-time doctors. About 36 percent of our physician workforce are primary care physicians. The Medical Group has an exclusive contract with Kaiser Foundation Health Plan, Inc. of Southern California to manage the health care needs of over two million members in an area about twice the size of Massachusetts. There are 11 medical centers with hospitals that we own and 67 medical office facilities that serve this very large Region.

Limitations of the Current Permanente Structure

The current structure of the Southern California Permanente Medical Group is typical of large HMO's. Permanente physicians are organized into departments by specialty. Members may, at their option, select a primary care physician as their principal doctor. This physician, who may be from family practice, general internal medicine, or certain subspecialities such as endocrinology, responds when the member seeks care. The primary physician treats many problems, ordering tests and procedures and making referrals to subspecialists as needed. He or she also manages hospital care.

This structure, in which relationships among primary care physicians and specialists are very similar to those in the fee-for-service sector, has served clients and our physicians well in the past. However, I do not believe it will be as successful in the 1990's and beyond. I see several problems:

- It is more suited to the interest of doctors and hospitals than to the interests of members;
- It does not make the primary care physician accountable for the timeliness or quality of services he or she does not provide;
- It does not make the primary care physician responsible for the costs of services provided; and
- It does not provide a mechanism for ensuring that all members receive preventive services at appropriate intervals.

I expect these problems to become more acute in the future if current trends continue. One of these trends in Southern California, as elsewhere, is the increasing diversity in our membership. Mirroring the population, our members are from many different racial and ethnic backgrounds. A 1990 Kaiser Permanente demographic survey showed that the ethnicity of our Health Plan population was as follows: 10 percent Asian-Pacific; 14 percent Black; 24 percent Hispanic; 51 percent White and 1 percent other ethnic groups.

These populations evidence needs for health care that are different from expectations of health care providers. Another trend is the increasing efforts by our employer/purchasers to assure themselves that they are receiving the best value for their premium dollars. We expect continued fiscal pressures from employers in the future.

We are observing changes in health care in Southern California such as increasing sophistication of health care consumers, the growth of demand for more home health care and geriatric services, the blurring of inpatient and outpatient services, and the computerization of clinical and management information.

To solve some of the problems we are experiencing and to make us more responsive to the needs of our members and their employers in the future, we are developing a new structure that will position us to compete as effectively in the future as we have in the past.

A New Structure

We have high goals for the new structure. We want it to focus on the needs and expectations of diverse members and employers. We want it to enhance the commitment and personal connection to the success of Kaiser Permanente among all members of the health care team. We want to improve information management for both clinical and administrative purposes and to improve information flow throughout the organization. We want to strengthen the partnership between the medical and business aspects of our organization.

Not the least, we want to increase the authority and accountability of the primary care physician for coordinating services, ensuring member satisfaction, improving clinical effectiveness, and monitoring costs.

The central feature of our new organizational structure is the Member Initiated Care Unit, or MICU. This unit is to be member-oriented, decentralized, and accountable for clinical and fiscal performance.

The MICU is to serve a defined population of Kaiser Permanente members. Its hub is the primary care team that will provide the point of "connectedness" to these members. The head of the team is the primary care physician, who is responsible for articulating goals and increasing the effectiveness of the team. He or she oversees schedules, ensures satisfactory access, and removes barriers to care. The primary care physician is responsible for communicating with consultant/referral physicians, reaching agreement with the specialist on the processes for delivering care, timeframes, expected outcomes, and provisions for secondary referrals should they be indicated.

The primary care physician is to be the member's partner in ensuring that the member receives appropriate care and that the member is satisfied with the care received.

Each MICU is to be responsible for meeting organizational goals:

1. All members have timely access to services;

2. Members are satisfied with their care;

3. Costs per member per month are within an acceptable range;

4. Health promotion and clinical outcomes meet organizational guidelines.

We want to make sure that all members can get care quickly when they are injured or sick. We want them to receive preventive services such as immunizations and screening for breast cancer, cervical cancer and colorectal cancer. We want high percentages of our members to express satisfaction with the care they and their families receive, to decide to re-enroll, and to recommend our care to their friends. We want our members and their primary care physicians to be aware of the cost implications of their decision to utilize services. And, we want our members to participate in decisions affecting their health care.

Each MICU is to be accountable for its own budget and for its own membership growth objectives. In addition to its responsibility for the satisfaction of its panel of members, it also is responsible for the satisfaction and job continuity of its physician and employee staff.

The team that has developed recommendations for the new structure is committed to a design that fosters the continuous improvement process through the following means:

1. By organizing to meet the needs of customers, both members and purchasers;

2. By establishing good measures of process and outcome and holding people accountable for continual improvement. We have established a contractual relationship with Dr. David Eddy, a national authority on clinical practice guidelines and medical outcomes research, to help the Program create a formal, fact-based process to aid medical practice guidelines and monitor clinical outcomes;

3. By continually benchmarking achievements internally and externally to enable organizational units to know how they are doing compared to the competition;

4. By fostering dissemination of innovations and learning.

The design team developed a model of a member centric organization (Figure 1). The innermost circle represents the member. Concentric rings around the center represent various service levels. The second circle represents services that the member encounters prior to and without becoming a patient in the system. The third circle represents member-initiated services such as emergency services, urgent care services, and preventive services. Clinical support services (e.g., laboratory and radiology), referral/consultative services, and tertiary services are represented in rings four and five. The outer ring represents the administrative and management support services and systems that facilitate the functioning of the rest of the rings.

The MICU will be responsible for delivering some ring two and all ring three services to a defined population of members. Physicians and employees in this unit also take responsibility for being a partner with each member in securing needed services from rings four and five in a timely, efficient manner. Management services and systems are to enhance the ability of the MICU to meet its responsibilities and to work with other MICUs to develop objective goals and measures of success. In summary, the MICU has been identified to accomplish the following as shown in Figure 2.

New Processes and Systems

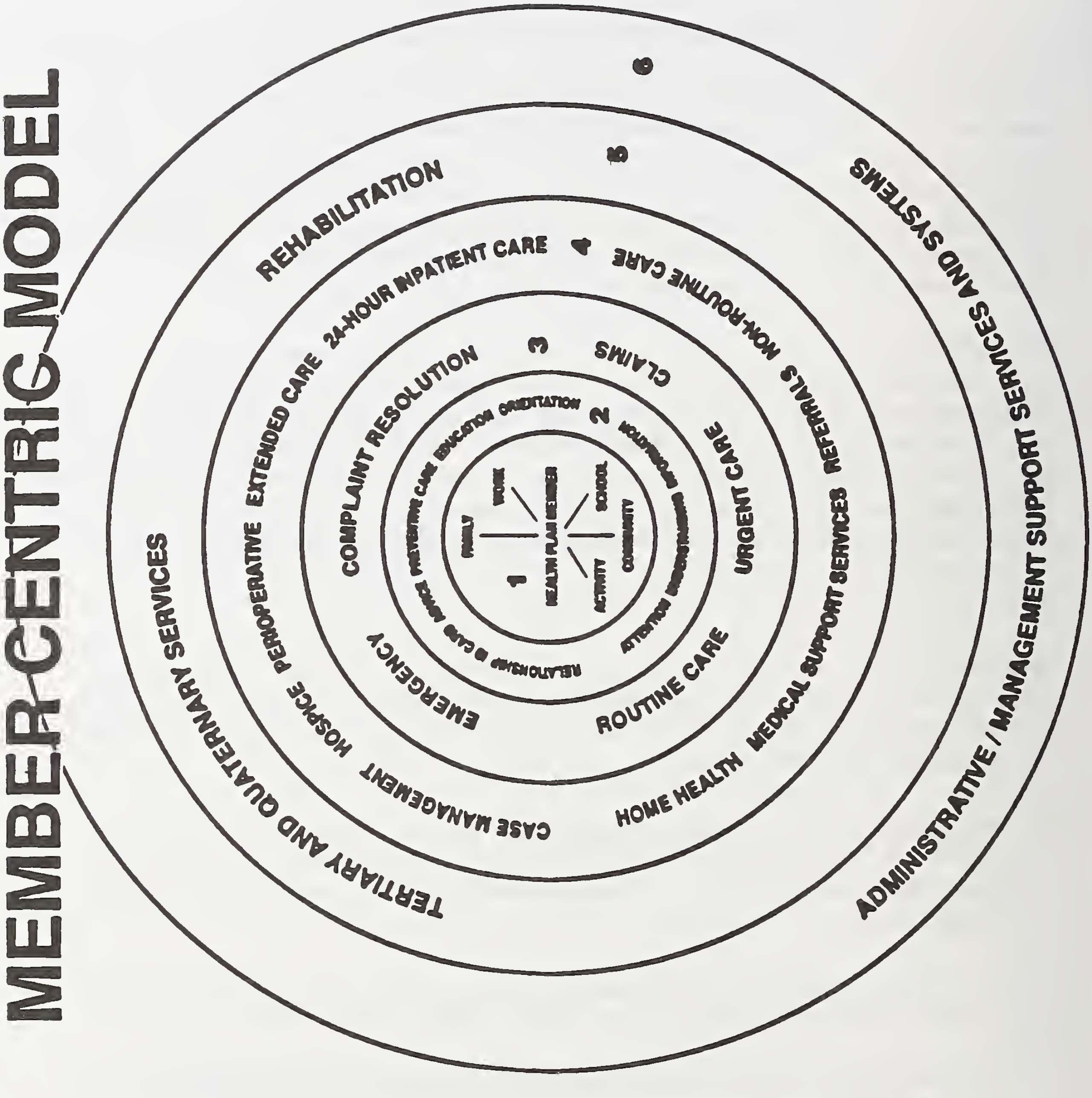
We recognize that structure alone cannot accomplish the results we are seeking. Measurement, budgeting, accountability, and incentive systems that support the new way of functioning will be needed. The design team has outlined broad characteristics of these processes and systems.

1. Accountability/Performance Measurement Systems--Accountability and performance systems create clear, inescapable measurement for the purposes of establishing accountability and helping managers track performance. These systems are to:

    - Include a process where measures and performance standards are agreed upon, negotiated, and achieve needed consistency across the Program;

    - Create shared performance accountability for jointly managed units and processes;

Figure 1



MEMBER CENTRIC MODEL

1
HEALTH PLAN MEMBER
FAMILY
WORK
SCHOOL
COMMUNITY
ACTIVITY
2
ORIENTATION
EDUCATION
PREVENTIVE CARE
ADVICE
RELATIONSHIP IN CARE
ATTENTION
3
CLAIMS
URGENT CARE
ROUTINE CARE
EMERGENCY
COMPLAINT RESOLUTION
4
NON-ROUTINE CARE
REFERRALS
MEDICAL SUPPORT SERVICES
HOME HEALTH
CASE MANAGEMENT
HOSPICE
PERIOPERATIVE
EXTENDED CARE
24-HOUR INPATIENT CARE
5
REHABILITATION
TERTIARY AND QUATERNARY SERVICES
6
ADMINISTRATIVE / MANAGEMENT SUPPORT SERVICES AND SYSTEMS

Figure 2

THE MEMBER INITIATED CARE UNIT

A service delivery system that:

➔ Provides member initiated services

➔ Is built around the needs/expectations of the member

➔ Is the building block that the rest of the organization designs itself around (e.g. support services, inpatient services, speciality services)

➔ Is accountable for providing integrated services through a clinician/member partnership

➔ Holds MICU Teams accountable in the areas of PMPM cost, quality of service, clinical outcomes/improved health status and satisfaction for a defined membership

- Provide methods for determining and measuring Region-wide objectives and for ensuring that objectives of interdependent units are mutually supportive;

- Support an "improvement philosophy" with improvement objectives set unit-by-unit based on key indicators;

- Create links between performance measures, performance appraisal, and an incentive system;

- Create an accountability system for internal customer relationships, which includes processes to deal with the failure to meet agreed-upon performance standards. The system would also create a true customer/supplier relationship, which includes the customer having a "checkbook" for referral services.

I believe it is appropriate here to point out the significance of this characteristic. It means that the primary care provider will be treated as a customer by the specialty referral services used to diagnose and treat patients. This is a major departure from our current mode of operation in our group model HMO where both primary care physicians and specialists are generally oblivious to the cost implications of medical decisions. Generally speaking, our physicians are also not as informed about timely access and patient satisfaction with specialty referrals as we would want them to be.

2. Information Systems--Information systems should:

   - Provide timely operating results and trend data from many different kinds of measurements. These include cost, service (e.g., access/productivity), satisfaction (member, purchaser, and employee/physician), quality, outcomes (for both utilizing and non-utilizing members), the use of specialty resources outside the unit;

   - Aggregate and disaggregate the data to small or large operating units;

   - Allow for data to be accessed and entered directly from the operating units.

3. Financial Systems--Financial systems should:

   - Provide timely operating results and trend data to the operating and support service units. Using centrally established standards for per member/per month costs and performance targets, the operating units would use flexible budgeting and make their own trade-off decisions;

   - Provide cost accounting information to support managerial decision making, such as trade-off analysis;

- Measure the cost of serving particular subpopulations of members;

- Create a mechanism that recognizes member initiated care provided outside the member's MICU;

- Develop joint Medical Group and Health Plan budgeting. I will speak more about this later;

- Provide revenue assignment capability to business units.

4. Planning Systems--Planning systems should:

    - Integrate the plans among facilities, human resources, finance, marketing, medical delivery, and information systems;

    - Be broad-based, addressing strategic objectives for growth, cash generation for our capital program, cost and service-targets;

    - Be a tool for managers.

5. Marketing Systems--Marketing systems should:

    - Support our partnership relationship with our customers and members;

    - Be flexible and provide timely, relevant data and information to our purchasers and members;

    - Support the achievement of program strategies and objectives through systems which include membership forecasts/allocations, rating practice methodologies, and member/market information.

6. Human Resource Systems--Human Resource systems should:

    - Create incentives for improvement on key performance measures;

    - Support desirable continuity of staffing in performing units;

    - Provide rewards that foster lateral movement and multi-skilling;

    - Reward service to members and purchasers;

    - Reward teams and individuals;

    - Allow for flexible job definitions;

- Provide managers with effective tools and information for human resource problem identification and problem solving;
- Provide physicians with management training;
- Continually measure and enhance the well being of physicians and employees.

7. Learning/Value Improvement Systems--These systems should:
    - Promote the benchmarking of operating information across units;
    - Promote dissemination of practices associated with excellent performance and improvement;
    - Create overlay structures (task teams, councils) that cut across units and foster excellence in particular areas (e.g., service to particular customers, development of functional excellence, etc.);
    - Provide bottom line accountabilities/reward systems that promote adoption of others' good ideas.
8. Medical Care Deliver/Administrative Systems--These systems should:
    - Allow the creation of a database that provides clinicians in the MICU with the information necessary to care for and be accountable for a defined panel of members. This includes notification of hospitalization, referral physician's diagnosis/treatments, and urgent/emergent care services rendered. The MICU is the basic unit for quality management; allowing for experimentation in scheduling, provide for risk-taking, and communicating with members;
    - Notify the MICU of services/encounters provided outside a member's MICU.

Remaining Issues and Challenges

While we have come a long way in conceiving the new structure, we have important design issues still to be settled. We also have hard work ahead in implementing the design once the issues are settled.

Issues ahead include these:

1. The Primary Care Team. The composition of the team and the relationship between the member and the primary care clinician. How to measure and ensure that members are satisfied with their care and that primary care providers are satisfied with their care and that primary care providers are satisfied with their position in the organization and the services they are

providing. Who is the leader of the team? Where do employees fit (both Permanente and Kaiser staff)?

2. Empowerment of the Primary Care Physician. How to change the clinical culture so that physicians providing clinical support and referral services consider the primary care physician and the patient as the "customer." The nature of decision making, how information will flow, and thresholds for referring and returning patients must be addressed.

3. The Relationship of the MICU to the Rest of the Organization. How does the MICU come to take a leadership role in cost containment and Total Quality Management? What will be the responsibility of the MICU to the rest of the organization? How much variability is possible?

4. The Relationship of the Southern California Permanente Medical Group to Kaiser Foundation Health Plan. In our organizational design, we are contemplating subregional, fairly autonomous business units with accountabilities for per member per month costs, patient access to care, member satisfaction and health promotion and clinical outcomes. As such, these business units will be jointly managed by the Medical Group and Health Plan executives, using a single budgeting system, thereby creating a seamless organizational structure. Remember that historically the Permanente Medical Group is separate and independent from Kaiser Foundation Health Plan, with its own budget and administrative structure. This design change, therefore, is very significant.

5. Outcome Measures. What specific outcome measures will be employed and how they are to be monitored? How will Kaiser Permanente decide if the new organization is a success?

6. Barriers to change. Other than the fundamental barrier of people's resistance to change, the major issue for us will be redefining the role of the primary care provider, and the relationship of this clinician to medical and surgical specialists. We anticipate that by driving decision making into the MICU and creating a reward and incentive system that recognizes team performance in relationship to specific indicators such as per member per month costs, member accessibility to services and member satisfaction that we will over time achieve a culture of an empowered workforce.

The morale of primary care physicians in the United States is at an all time low, and our Permanente physicians are a microcosm of this circumstance. It is my intent to elevate the primary care specialists through a change in the importance of their role in our prepaid health care system. We will benchmark those practices in our business units and outside the organization that are best practices to continually improve our services. In communicating our business plan and organizational design changes to the Southern California Permanente Medical Group Board of Directors and our physicians, the doctors have recognized very quickly the benefits of these organizational changes for them. The threatened people in our plan are the management hierarchy of Kaiser Foundation Health Plan and the Southern California Permanente Medical Group. This is our greatest barrier to change. I don't have a good response to the audience on how I will deal with that. Invite me back next year and perhaps I'll have information on that matter for you.

Hospitals and Primary Care

Richard A. Norling, M.H.A.
Fairview Hospital and Health Care Services

The National Association of Manufacturers (NAM) has endorsed the application of the principles and philosophy of continuous quality improvement (CQI) to the reform of the U.S. health care system.[1] Many hospitals and health systems are already well into the learning curve. Key principles associated with CQI include: identification of customers and their needs, a focus on process improvement to eliminate waste and redundancy, a constancy of purpose or goal-seeking behavior, a process of continuous improvement rather than radical redesign, and a focus on empowering those workers who are "closest to the customer."

Fairview in its strategic planning process has embraced CQI and recognized the need for radical paradigm shifts in its approach to health care delivery. A Vision 2000 document has been developed and approved by the board that recognizes a fundamental shift in emphasis over time from acute, episodic services to accountability for health status improvement in a defined population at an acceptable per capita cost. Five goals have been established geared to providing value to the key customers of Fairview consistent with this expanded role. Creating value for patients and their families is a traditional and continuing goal. Creating value for physicians as a goal recognizes their status as customers of Fairview's facilities and offers tremendous future potential for meaningful win/win partnerships. An integrating priority is the process of actively partnering with physicians to create value for patients and their families.

Jo Ivey Boufford, M.D., in a paper presented to the 1990 King's Fund International Seminar, accentuates this prioritization with the rhetorical question: "What if the patient was the community?"[2] This challenges all health care professionals to begin to define the community as a customer and develop an organized process to listen to the needs of various communities. Meeting these needs by creating value for communities will require strong partnerships among various health care providers and public health professionals with particular emphasis on empowering those at the point of service. Usually within the health care delivery system the point of service is the primary care physician.

In addition, the purchasers of care, either through direct contracting or various forms of relationships with third-party payors, are seeking value from the health delivery system. The process of creating value for purchasers has generated the two remaining goals in Fairview's Strategic Plan. Understanding the needs of purchasers has led to an increased focus on the health needs of a population spread throughout a regional market of far greater geographic dispersion than the primary service areas of the various Twin Cities Fairview hospitals. Thus, the process of creating value for purchasers has led to the need for implementation of a regionally integrated health network with an emphasis on a primary care distribution system.

An application of the principles of CQI coupled with an understanding of the need for system reform suggests that hospitals and health care systems will be relating to primary care physicians not only as customers but also as partners in an integrated regional health system organized to improve the health status of populations at acceptable per capita costs. Effective relationships between hospitals and primary care physicians will require collaboration efforts to understand the necessary paradigm shifts, recognize the community and purchaser of care as customers, identify workable models for hospital-physician relationships, and ultimately redefine patient care and administrative processes to shape a vertically-integrated regional health system.

Paradigm Shift

John Freymann, M.D., suggests that societal paradigm shifts arise out of a general dissatisfaction with a current view and that Americans are indeed radically shifting their attitudes regarding health care. "Health is a natural state and the key to maintaining it lies in lifestyle and the environment. Seen in this new light, hospitals and technology are no longer the ultimate source of hope in relieving human suffering... Public expectations are turning to community-based sources oriented toward prevention and health maintenance."[3]

Jeff Goldsmith, Ph.D., recently spoke at a Fairview leadership symposium and presented the following distinctions between acute and chronic care:[4]

ACUTE	CHRONIC
Life threatening	Management of health risk/maximize functioning
Organized system	Whole patient/family
Episode of illness	Rest of patient's life
High technology/cold touch	High technology/high touch
High unit cost/low episodic cost	Low unit cost/high life cycle cost
Hospital-based	Family neighborhood focus
Medical-surgical/subspecialist	Primary care/part of the multidisciplinary team

With these understandings and in consultation with Stephen Shortell, Ph.D., Fairview has embraced in its vision and plans the following needed changes:

Shifting of PARADIGM
From Hospital Systems to Health Care Systems

CURRENT		FUTURE
Acute, inpatient care, acute disease, episode of care	→	Continuum of care; focus on total care and chronic disease management
Treating illness	→	Preventing illness, maintaining wellness
Caring for individual patients	→	Accountable for the health status of defined populations
Unequal access to care	→	Universal access to care
Cost-based reimbursement	→	Risk-sharing and productivity demands
Market share of admissions	→	Covered lives
Limited responsibility for community and public health issues	→	More commitment to community and public health
Full beds	→	Care provided at appropriate level
Management of a specific organization	→	Management of a network of services
Management of a department	→	Management of a market
Coordinated services	→	Actively managed quality of processes and outcomes

A vision for a regionally integrated health system emerges. Freymann suggests "Primary physicians will be the key medical personnel in these vertically integrated systems. They will be the doctors of first contact for all patients except in the ICU's... They will have the full breadth and depth of medical knowledge at their fingertips in computerized data bases... They will know when to refer... but will retain responsibility for coordinating these services."[5]

Hospitals have traditionally concentrated on acute manifestations of chronic disease. A partnership with primary care physicians thrusts hospitals into the role of integrating the continuum of care not only in support of discharged patients but also non-acute, chronic patients.

Fairview is participating with a consortium of leading-edge health care providers to collaborate and develop provider-based innovations in chronic care. The primary functions of this National Chronic Care Consortium (NCCC) are to enable member organizations to:

1. Coordinate research and demonstration in chronic care innovations;

2. Share learning among NCCC members through prototype development;

3. Stimulate change in health care policy and financing;

4. Provide leadership and establish the next generation of chronic care.

Major emphasis is given to ensuring that compassionate, cost-effective care is provided to older adults and their primary caregivers who are faced with major, complex care requirements. As a top priority, the NCCC is developing comprehensive, locally based networks of geriatric care with provider-based managed care capability. In response to this, Fairview is involved jointly with the Ebenezer Society, a local nursing home management company, to develop a bridge between acute and long-term care by establishing the Geriatric Care Network (GCN). The GCN will provide older, chronically impaired patients and clients and their families with a simple, integrated continuum of strategically aligned services. It is intended to provide payors with a more efficient and effective system of care. Components of the GCN include acute-care services, short-term care and long-term care, primary care, prevention and other services such as financial advice, care management, health promotion, caregiver support and transportation.

This and other initiatives are enhancing Fairview's understanding of the needs of various populations and ultimately of the health needs of the community at large.

The Community as Customer

The concerns of community medicine are quite different from those of other clinical disciplines. Clinical medicine focuses largely on direct medical care provided to individuals although the examination of seemingly well individuals is encouraged in order to detect disease at the earliest possible stage. When the individual patient is replaced as the primary focus of concern, the problem expands to evaluate the health status of a defined community, including those members who would benefit from medical care but do not seek it.

In general, incentives do not exist in the health care system for hospitals and primary care physicians to collaborate to improve community health status. The philosophy of community as customer involves a radical paradigm shift and initially depends on the enlightened self-interest of hospitals and physicians. Complex partnerships with public health agencies, schools, police departments, local governments, churches, and major employers are necessary to create measurable results. The best examples of community-wide collaboration to address a health need are found in the area of infectious disease, specifically polio and AIDS. Such efforts traditionally fall outside of the mission or financial capacity of many hospitals and their affiliated primary care physicians. Lacking effective incentives in the system, leadership is necessary to initiate pilot projects to address community health status improvements.

The Kellogg Foundation has developed a voluntary accreditation program for hospitals to meet certain community benefit standards. Major professional organizations such as the American Hospital Association and the American College of Health care Executives have developed guidelines and codes of ethics for the community service of hospitals. The Robert E. Wagner School of Public Health at New York State University developed the Hospital Community Benefit Standard Program (HCBSP). These standards are intended to assist and encourage hospitals to develop a managed, highly effective benefits program. The HCBSP standards call for hospitals to develop a systematic program consisting of various activities and projects designed to give more explicit shape and identity to what the hospital is doing to fulfill its community commitment. In essence, these guidelines point to potential partnerships between hospitals, primary physicians, and community agencies to address community health issues.

It is widely acknowledged by hospitals across the country that long waits for initial primary care appointments are one reason why emergency departments have become the only place where some people can gain access to basic health care. Studies have confirmed that the provision of timely primary health services could avoid unnecessary catastrophic acute-care occurrences. For this reason, more and more experts believe that primary care must become a priority in hospitals. However, in a society fascinated by technology, the provision of basic primary health care services does not seem as glamorous. The American Hospital Association's policy and statement on primary care in hospitals supports this: "The U.S. health care system is technologically advanced, and more entrepreneurial and individualistic than other countries. For this reason, the U.S. health care system is more fragmented with no national focus on the development of a primary health care system."[6]

Responding to the need for primary care can fulfill community service and economic and private-sector goals. A hospital must match primary care services to community needs, not by just curing present ills, but by promoting health and preventing disease and working with primary physicians to provide better geographic coverage and extended-hour coverage. In the long run, such a philosophy will also help to enhance market share for the hospitals. Hospitals need to realize that if primary care is the access point to the health care industry, then hospitals need to develop effective ambulatory care programs in support of primary care networks.

Boufford defined a generalized process to assist hospitals in these efforts:

1. Identify a defined population for which the provider or integrated health care system assumes responsibility;

2. Develop links to the community through individuals and organizations;

3. Coordinate the volume and types of services it delivers with the health needs of a defined population to assure the appropriateness and cost-effectiveness of these services;

4. Develop primary care systems in the community that can link the patients to the level and intensity of resources needed at the appropriate state of health and illness;

5. Identify health problems in the defined community susceptible to effective preventive/health programs and health advocacy interventions; work with the community to define priorities and mount a campaign for community intervention as well as patient intervention;

6. Develop appropriate programs that focus on the health status of the work force, including health benefits;

7. Develop a role as an institutional advocate in the community to increase the healthy choices available to the population in schools, work settings, commercial establishments and other identified problem areas; and

8. Develop a role using institutional economic leverage within the community for health-related changes such as jobs for residents in the community, channeling purchasing and contracting power to community institutions, housing development via capital leverage, and educational programs for health careers and health education.[7]

Fairview's Community Health department is engaging in a pilot project in the Fairview Ridges Hospital primary service area of Dakota and Scott counties south of the Twin Cities. A comprehensive community health needs assessment involving detailed interviews with officials representing counties, municipalities, health departments, schools, fire and police departments, and local churches is being conducted. Various Fairview programs involving access for the uninsured and specialized treatment programs for abused women and children are highlighted, but the primary emphasis of these interviews is listening to community representatives as customers. Not surprisingly, needs preliminarily identified do not concentrate on high-tech services but focus on access to preventive and primary care services.

Fairview, in conjunction with Group Health, Inc., is a sponsor of a program called Community Health Plan (CHP), which provides coverage for the uninsured at minimal cost. CHP offers case management, outreach, and education through Catholic and Lutheran social services, and preventive, routine and specialty care and management through the use of staff model HMO physicians. CHP provides access to a wide array of primary care services, and the focus is broader than managing the episodic or catastrophic occurrences in the emergency room. The experience thus far has indicated that 83 percent of the cost incurred can be considered primary care and 17 percent specialty care including hospitalization. By joining forces with primary care and other health care providers, purchasers of care and the government, hospitals have a great potential for reducing total health care expenditures and refocusing dollars on expanding access to primary care.

Since its inception in January 1991, CHP has served more than 950 participants. The goal is to provide health care access to a targeted segment of the uninsured population. By doing so, we also hope to demonstrate the impact this has in a variety of areas, including health status, utilization, and costs.

CHP data are certainly not readily generalizable; however, they are consistent with other studies in the literature regarding the uninsured. A 1987 study of Massachusetts hospital discharge data suggests that uninsured persons have worse outcomes than insured patients. Researchers found that uninsured persons who are hospitalized for heart attacks faced a much higher risk of dying than insured heart attack patients despite the availability of an uncompensated care pool for paying hospitals to treat the uninsured. According to the investigators, uninsured heart attack victims were 57 percent more likely to die in the hospital than patients with fee-for-service insurance and 48 percent more likely to die than persons covered by HMO plans. The findings take into account factors such as age, presence of other illnesses and type of hospitals. The study also found that uninsured patients were less likely than insured patients to undergo cardiac procedures, such as angioplasty and coronary artery bypass surgery. The higher death rate and lower procedures rate for the uninsured suggests that they receive differential treatment compared with insured patients.[8]

A study of the uninsured experience in Washington, D.C., hospitals indicated 36 percent of all admissions (excluding OB and trauma) could have been prevented had there been access to a primary care system.[9]

Charitable care provided through the Community Health Plan (CHP) is a significant part of Fairview's community dividend. The broader concept of community benefit embraces a wide range of programs and services needed and utilized by the community. The community dividend is an approach to quantifying unreimbursed services provided to the community in the areas of charity care, education, and social services. Increasingly, the tax exemption of not-for-profit institutions is being scrutinized against a measurable dividend and compared to potential taxation revenues that might be derived. A recent unpublished study of major health systems quantified Fairview's community dividend at three times its potential tax liability. Large, financially successful organizations such as Fairview are able to respond to the challenges of the "community as a customer." It is noteworthy, however, that the Community Health Plan depends on primary care physicians salaried by a staff model HMO who can be financially indifferent to the quantity of indigent patients served. While independent specialists have committed to defined dollar amounts of specialty care, a workable model to involve independent primary care physicians has yet to emerge. The ability to respond to the community will require innovative models for service delivery and integration of many physicians and hospitals.

The Purchaser as Customer

In a market heavily penetrated by managed care such as the Twin Cities, much of the administrative waste and redundancy has been eliminated. This is corroborated by recent studies indicating that Minnesota has the lowest Medicare hospitalization costs per capita in the country and that Twin Cities employers pay an employee premium equal to 82 percent of the national average for large metropolitan markets.[10,11] Veterans of this market argue that many years of HMO involvement have created homogenous practice patterns and have caused the closure of unnecessary hospital beds sooner than in other markets. The Twin Cities have been a hotbed of hospital merger and system development activity. Hospitals and their medical staffs have affiliated in physician-hospital organizations (PHO's) to contract jointly with employers and health plans. Medical groups have merged with hospitals, while larger providers continue to absorb smaller ones. Systems are attempting to merge with other systems. While there are certainly many more opportunities for hospital cost reduction, the managed care market dynamics would appear to be moving effectively to control the cost of hospitalization.

The predictable increase in ambulatory care programs, services and attendant costs is occurring. Emphasis is shifting beyond hospital outcomes to patient outcomes. Demands for data outside the hospital setting are increasing while attempts to control ambulatory costs per unit of service are visible at Federal, State and local levels. Individual and small independent primary care practices are hard-pressed to cope with the pace of change. Yet there remains a fear of the loss of autonomy associated with joining a large medical group or hospital-owned practice. Effective primary care distribution systems are being demanded by purchasers of care. Such systems must share patient data bases, information networks, utilization review, and quality assurance programs. The potential for long-term collaborative partnerships among purchasers, payors, physicians, and hospitals clearly exists. It remains to define the components of win/win relationships. For hospitals to be effective partners, they must recognize and endorse a paradigm shift that the major attribute of a health system is not the tertiary hub but an effective and broadly distributed primary care network. If patients and their primary physicians are truly customers, they must be empowered and supported at the point of service. Clinical service deployment must be turned upside down from the traditional approach and rationalized according to the needs of patients and their primary physicians. Only then can purchasers and payors of care be assured that patient needs are being met at the appropriate and cost-effective level of care.

Partnerships--Why Hospitals?

Hospitals and physicians must learn to put their talents and energies together in a way that creates a value greater than if both went their separate ways. The challenge is one of creating synergy. Synergy requires an honest assessment and understanding of one's comparative advantages and disadvantages. In order for the hospital to be a model for expanding access to primary care, its affiliations with other providers must permit an "accordion-like" relationship between a hospital and other primary care providers, or one that can expand and contract as needed.

Hospitals are large, relatively complex bureaucratic organizations, while most physician organizations are relatively small and simple. Hospitals are highly specialized, and physician organizations are much less specialized. Hospitals have a high-technology, intensive treatment orientation, and physician organizations rely less on sophisticated technology. A patient encounter in the hospital typically lasts one week, while in a physician office, it is a matter of minutes or an hour at most. In the hospital, patients are "captive," while in a physician's office patients come and go. The administrator-physician relationship is relatively impersonal in the hospital and is structured through and around various offices and committees. In the physician clinic setting, the relationship is more immediate and personal with direct daily contact. These are some of the examples of inherent differences between hospital and physician organizations.[12]

A recent survey by Arthur Andersen of physicians, hospitals, and health care administrators revealed that in order to continue to receive the support of patients and payors, physicians and hospitals must:

1. Place consumer and patient interests first in designing more coordinated and effective local delivery systems, and demonstrate a truly caring attitude to all patients in the community;

2. Develop integrated physician/hospital entities that will appeal to employers, managed care plans and their members;

3. Disclose more information in a responsible and educational fashion to demonstrate accountability for access, cost and quality, so that consumers of care can evaluate the competency of the providers they select;

4. Involve other community organizations, such as schools, social agencies, and civic and religious organizations to advance the health status of the community; and

5. Engender community support for counteracting the effects of restrictive governmental payment policies and work with community leaders to lobby State and national legislatures on important health policy issues.[13]

The following can inhibit a hospital from working easily with primary care providers:

1. The hospital is currently positioned with all the technology. It is easier to develop from a technological rather than a community base. It is easier for a hospital to get a community to follow certain medical protocols or continuum standards of care than it is for the community to get a hospital to follow these same protocols.

2. The introduction of the resource-based relative value scale and the linkage to volume or expenditure targets.

3. Competition with primary care providers for outpatients (e.g., migration of diagnostics in surgery to ambulatory settings).

4. Safe Harbor Regulations and Ethics in Patient Referral Act of 1989, both of which restrict and constrict physician income-generating options.

5. Payors are creating incentives for outpatient care, and patients want more access and convenience.

6. Payors place physicians at risk for inpatient care, which creates an unnatural tension between physicians and hospitals.

7. Physician organizations have a generally strong professional culture and are "closer to the customer." They are more likely to be able to change quickly to meet the changes in customer preferences and are potentially able to take advantage of entrepreneurial opportunities as they arise. Hospitals, in contrast, cannot move as quickly.

8. The skills of hospital management staff are not always transferrable to other settings.

9. Management systems are not always transferrable from a hospital to other settings.

10. Hospitals have a diffuse culture.

11. Physicians view hospitals as intruding into their business.[14]

There are, however, many opportunities for partnerships between primary care providers and hospitals. The hospital has the ability through process, affiliation, size and influence to link the primary care provider into a broader system. Physician groups are isolated by virtue of the environment in which they work. Hospitals typically have greater experience in dealing with external forces and a greater ability to gain attention than do smaller physician organizations. Hospitals are simply more visible in a community. Other reasons a hospitals can serve as a resource for coordinating primary care issues are these:

- Hospitals usually have the capital while physician organizations do not.
- Hospitals typically can have more political clout and influence than individual provider groups.
- Physicians often lack environmental understanding, which hospitals can provide.
- A hospital by virtue of its size and access to capital can do more and with broader impact than physician organizations.
- The hospital has the technology on its side.
- Hospitals have the management information systems and services that they can offer physician groups (e.g., billing and market analysis).[15]
- Assist in the development of new primary care practices and ambulatory care centers.

Specifically, hospitals can help primary providers by:

- Assisting in the ongoing operations of existing practices--business systems, recruitment, retention of physicians, and contracting.
- Forming physician-hospital organizations that are oriented toward partnerships for serving patients and exploring opportunities to meet mutual needs.
- Developing patient-focused information systems and linkages to assist in care management and improve clinical outcomes.
- Creating joint ventures that offer financial and technical resources in support of medical practices.
- Focusing community giving based on needs assessments.
- Developing protocols for management of acute and chronic health care needs, which lower variation in practice, improve outcomes and reduce costs.

- Promoting primary care education and research.

- Providing risk management, utilization review, and quality measurement systems.

In summary, physician-hospital relationships create the potential for better care, stewardship of resources, health system planning, access to capital, and research and education. The emphasis on working in concert through integrated health care delivery systems to improve the health status of the communities served should not be misunderstood to imply that the focus on the patient as an individual customer is no longer important. On the contrary, principles of continuous quality improvement define the individual patient and their family members to be customers along with payors, physicians, and the community.

Models for Hospital and Primary Care Partnerships

Physician-Hospital Organizations (PHO's)

One of the expressed purposes of a PHO is to arbitrate conflicting expectations and explore opportunities that can meet the professional and economic needs of both the hospital and physicians. Usually a PHO involves a situation where the hospital and physician are at financial risk and have shared goals within a shared management and governance structure. It is understood that some members may go their own way from time to time. In addition, the physician components need to be able to stand alone as joint ventures and support themselves in the long run. The basic philosophy is collaboration wherever possible, but recognizing the need to compete occasionally when mutual interests do not develop.

PHO's that have been the most successful have the following characteristics:

- The need for both the hospital and physicians to be at financial risk. Fiscal accountability meant that the activity would receive serious consideration for both parties.

- The need for the venture to provide strategic fit with both hospital and physician objectives. Ideally, these would derive from extensive physician involvement in the hospital strategic planning process.

- The need for explicit review criteria that included a detailed business plan, alternative scenarios and contingency plans.

- The need to avoid exclusivity and to consider outside investors so as to dilute somewhat physician involvement with regard to potential conflict of interest legislation.

- The management of the joint venture as a professional business relationship.[16]

Management Services Organizations (MSO's)

A management service organization is a joint venture typically including physicians, physician organizations, and outside participants, such as hospitals, insurers, and developers. The MSO offers financial and technical resources in support of medical practices. Operating on a fee-for-service basis, it offers physicians access to better facilities and equipment, improved management systems, and greater opportunities for managed care contracts while maintaining individual professional autonomy.

The MSO can have a single investor or several investors. Investors could include not only a hospital but group practices, individual physicians, insurance companies or others. The MSO itself provides the following services to the organization: centralized marketing, physician recruiting, contracting, MIS development, purchasing, financing, facility development, ancillary service ownership, accounting, management, contract management, billing, and personnel or human resources. The MSO can be a partnership between physicians; a hospital and physicians; a third-party payor, hospital, and physicians; or physicians and a venture capitalist. It is, however, one model for building a continuum of services through affiliation and partnership with other providers.[17]

Competition Model Hospital

One alternative to the existing physician-hospital relationship is the creation of what Robert Rosenfield from the law firm McDermott, Will, and Emery, has referred to as the competition model hospital. This model assumes that those hospitals that do the best job of evolving to charities organized and functioning like a business will have the best chance of remaining financially viable. This competition model hospital has the following components:

- Stronger management and governance--Members of the board of directors should be recruited specifically for their areas of expertise, compensated for time and reviewed periodically for their performance. The board must have greater physician participation in order to expand the loyalty of physicians affiliated with it. CEOs would be voting members of the board and be able to bring other executives onto the board with them. The CEO's power should be expanded.

- Reduction of the dependence on debt--This involves development of a financial plan that emphasizes improved bottom-line profitability and capital contributions from medical staff personnel. It should attract physician capital through hospital/physician joint ventures.

Sale/lease-back techniques and sophisticated agreements that permit physicians to participate in net revenue generated by outpatient departments offer physicians an incentive to make capital investments. In turn, the organization needs to produce returns that are satisfactory to physicians.

- Emphasize financial incentives--A larger percentage of total compensation for senior management staff should be contingent on successful performance against standards specified by a board compensation committee. As with hospital employees, physicians should also be paid incentives or bonuses keyed to performance standards and management goals.

- Establishment of a duty to economic loyalty--Obviously, to the extent a hospital can employ physicians, it will be easier to require them to practice full-time with the hospital and not divulge confidential information or compete or invest in another facility. Similarly, to the extent of the hospital's joint ventures with its physicians, it can take advantage of techniques already developed that require investing physicians to sign covenants not to compete or invest in competing facilities. The key issue is the ability to impose non-competition requirements on all physicians who wish to have privileges at the hospital.[18]

Group Practice Models

Management services model: In this model, no real group practice is formed, but several primary care practices become loosely linked to the hospital through management services. To avoid violating Medicare fraud and abuse rules, hospitals usually must charge market-based rates for services provided. Physicians retain ownership and clinical assets (e.g., patient records) and non-clinical assets (office space, equipment, etc.). The hospital provides numerous management services, such as facility and equipment leasing, office staff, billing, marketing, and other services. Hospitals can also provide financing services, including working capital loans or practice transition funding. Overall, the management model offers varying degrees of support in handling the business aspects of physician practices.

This model involves minimal financial risk for a hospital but only achieves minimal affiliation with physician practices. This arrangement means that hospitals have little ability to influence the strategic direction or affiliation of the practices. A hospital risks seeing practices benefit from management services provided but later changing hospital affiliation or making other strategic changes that are not in the institution's best interests.

Non-clinical assets model: Under this model, the group practice is made up of individual practitioners sharing a practice site or a group practice owned by the physicians without involvement of the hospitals. A hospital purchases non-clinical assets of the practice and maintains the practice site.

This model creates a stronger relationship between the hospital and the group practice than a simple management services agreement. The hospital is responsible for the practice location, equipment, and employment of office staff. Physicians retain ownership of clinical assets of their practices. The arrangement gives physicians the autonomy of owning their medical records while having the freedom to practice medicine with little concern about its business aspects. It offers physicians a cash payment for non-clinical assets in exchange for aligning their practices with the hospital. For a hospital, however, it may lead to the acquisition of undesirable real estate and equipment. It also demands significant hospital capital for acquiring practice assets. Acquisitions must be completed at fair market rates to avoid private inurement issues. The model avoids the risk of corporate practice of medicine by leaving the clinical portion of the practices with the practicing physicians.

Practice acquisition model: A hospital purchases both non-clinical and clinical assets of a practice. Physicians agree under contract to treat patients at a practice site, either for a salary or a percentage of the practice's revenue.

The model offers physicians a cash payment for their existing practices. To avoid the corporate practice of medicine prohibited in some States, a hospital cannot directly purchase a practice. Instead, practices must be purchased by another physician (such as the lead physician designated by a hospital), held in trust or acquired in another way. The model also requires hospital capital for making the acquisitions.

Practice building model: A decision to recruit new physicians for opening a new practice carries more financial risk because of start-up expenses versus buying established practices. Increasingly, hospitals are asking physicians with established practices to merge with the hospital practice, which is expected to strengthen the relationship between the practicing physicians and the hospital.

It is difficult to merge practice styles of mature physicians, and those practices at their peak are the most costly to acquire. Recruiting some physicians and not others also may anger those not asked to join the hospital's practice.

Incorporating established practices of physicians near retirement or in the process of retiring has been seen by hospitals as an effective defensive strategy. It can also be seen as a expression of loyalty to physicians who have worked with the hospital for many years, as well as an opportunity to enhance new physician recruiting efforts. However, the hospital's purchase price for a practice may not meet a physician's expectations and could lead competing hospitals to become interested in that practice.[19]

Vertical Integration and Building Health Care Systems

Purchasers are looking for health care plans and systems that offer their employees or beneficiaries a wide array of coordinated services. To be a provider of these services does not necessarily mean a hospital has to own or provide all of these services themselves, but hospitals will have to be productive participants of a delivery system that can ensure such a range of services. Insistence on hospital autonomy and control will have to change.

Dr. Stephen Shortell, Ph.D., at the Center for Health Services and Policy Research, Northwestern University, describes six criteria of systemness for hospital organizations:

1. Shared commitment to a common culture and underlying mission by all involved;

2. Systemwide financial planning, budget control, and use of surplus funds;

3. Systemwide strategic planning;

4. Systemwide human resources planning;

5. Systemwide decision and input support systems (e.g., management information systems, marketing research, purchasing, and technology development); and

6. Systemwide quality assurance and physician credentialing.

A vertically integrated health care system contains a continuum of health services, such as a hospital, ambulatory care, nursing home, and home health care services required to meet consumers' needs.[20] Hospitals are well-positioned to encourage and develop continuums of care because of their access to capital, visibility within the community, experience dealing with external forces, sophisticated management information systems, and access to technology. Perhaps the major challenge is for hospitals to work with primary care physicians.

CQI is an important philosophy in moving a health care system toward integration. It assumes that both the individual provider and hospital are part of a larger system. In essence, the primary care physician is the point-of-service representative for the health care system. The primary care physician reflects the quality of the integrated system through his or her behavior, understanding of the resources within the system, and respect for and participation in it. CQI provides a philosophical framework and process for linking the various parts of the health care delivery system, in particular, the physician and hospital.

Examples of systemwide approaches to continuously improving processes of service delivery involve movement toward development of clinical pathways or care protocols.

Typically, these involve the multidisciplinary team approach to developing the best method for managing chronic care or other diseases regardless of the patient's point of entry into the system. It is an effort to coordinate the system in the most efficient manner to meet the continuing needs of individuals with certain chronic illnesses or the specific needs of patients with acute illness. The process of developing and then following clinical pathways or care protocols has great potential for linking the various services throughout the health care system in support of patients and primary physicians.

The future of hospitals and primary care rests exclusively with the ability of the parties to understand the needs of patients, families, purchasers, and communities while responding in an integrated, organized fashion and guided by a philosophy of continous improvement. Health policy must provide the appropriate incentives.

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Education for Primary Care

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If Congress and the Administration were to pass some kind of universal access health care plan tomorrow, lines of health care consumers would form outside practitioners' offices, clinics, and hospitals across the country. We simply are not producing enough new practitioners to meet such a demand for care. Of the hundreds of thousands of new health professionals that the Nation's health professional schools do produce each year, are we teaching them to contribute and thrive as practitioners in tomorrow's radically different and ever-changing health care environment?

The current debate surrounding the expansion of the primary care capacity of the Nation is part of a much broader national issue dealing with health care reform. Many of the characteristics of primary care such as continuity, comprehensiveness, coordination, and family and community orientation are basic elements of the numerous calls for general health care reform now on the Nation's agenda.[1,2,3,4] This broader debate and much of the discussion at this conference centers around policies that reposition the health care finance and delivery policies in support of general reform, including the expansion of primary care.

There is little discussion of the need to reform educational and health personnel utilization policies as a part of either a more general set of health care policy changes or those that specifically address the primary care needs of the Nation. This is not to argue that reform of health care should depend upon the whims of the more than 2,000 curriculum committees that oversee the education of the health professionals. No one should wait that long for any reform. Yet, no one is considering health care manpower issues or the education of our providers as leverage points to change and a more efficient system. The Nation's health professional educational system can, and must, be reformed to support the development of a health care system that has a greater emphasis on primary care. It seems unlikely that much in the way of fundamental and long-term change in health care in the United States will be possible or successful without significant realignment in the types of health care practitioners we have and the kinds of skills, competencies, and values they bring to their practice.

Changing the content and location of health professional education alone will not be adequate to the task of changing the career preference and practice patterns of graduates; however focusing only on how practitioners are to be paid, the level of their compensation, or the context in which they practice will limit the ability of the system to respond to some of the systematic issues it must confront. Unless health professional schools prepare a different mix of health care providers, with a new set of skills and values, and the foresight and freedom to practice in new ways, then the

Nation is likely to fail to meet the challenge of expanding access to care, improving the quality of that care and, simultaneously, reducing the overall costs of the health care system.

Over the past two years, the Pew Health Professions Commission has focused on this important issue of how the health professions might be redirected to serve the emerging and future health care needs of the Nation. While much of what is presented here is drawn from the Commission's work and my contributions to it, the analysis and suggestions contained in this paper must stand as my assessment and not the recommendations of the Commission.

In preparation of its first report, the Commission assessed the various social, political, economic, scientific, educational, demographic, epidemiological, and technological forces that would likely play a role in shaping health care in the first two decades of the next century. More than 90 trends were described and discussed. From this analysis, a scenario of the future of health care in the United States was developed. Let me describe what we believe lies ahead.

It is highly likely that this future system will have three fundamental characteristics. First, it will emphasize primary care and prevention, use technology appropriately, and have a population orientation. Second, it will demand cost-effectiveness by creating highly coordinated delivery systems and providing reimbursement only for effective care. Third, it will require greater accountability on the part of providers, consumers, and payers in the form of outcomes and cost benefit standards.[5] There will undoubtedly be other, known and unforseen, factors that will influence the health professions over the next two decades. These three, however, seemed to be the ones that would most dramatically shape the future.

The emphasis on the need to develop a primary care oriented system is, of course, not unique to the Pew Commission. There is a growing recognition that the health of the Nation and its system of health care will be better served by such an orientation.[6] There is also an alarming trend that indicates that interest in primary care as a career is waning on the part of medical school graduates.[7] The physician's role in primary care is and will continue to be central. However, the changing primary care preferences, orientations, and capacities of the other health care professions, particularly nursing, allied health, dentistry, and pharmacy, must be considered as important parts of the overall manpower system that provides primary patient care services.

In some important ways, primary care cannot be considered apart from other aspects of the movement to change health professional schools. Issues such as community oriented programs, student centered education, core curriculum and quality improvement are all dimensions of this change movement and must be a part of this discussion. These reforms run throughout each of the disciplines mentioned above and are a component of the nascent reforms in each profession. This paper will discuss some of the institutional reforms that cut across the health professions as they confront the task of developing more primary care missions.

Health professional schools are responsible for producing practitioners that respond to the health care needs of the Nation. Increasingly, these needs are defined in terms of the shortfalls of an overspecialized system and shortages of primary care providers. Meeting this responsibility will require substantial redirection in education and this will not be an easy undertaking. Change is a difficult process for individuals and for organizations; it generates conflict, and it creates uncertainty.[8] In health professions education, change is hampered still further as internal and external arrangements act to limit the likelihood and extent of reform in these institutions.[9] Thus, lasting redirection within a profession or institution requires a coordinated, multilevel set of strategies, with attention to both internal and external environments. The leadership within the schools must recognize the problem facing them and have a vision of the solutions.

Yet, recognition and vision alone will not lead to change. In the absence of skills in leadership, planning, and communication, even the most compelling vision will remain unattainable. The schools must understand the larger picture and strategic issues, but they must be managed and led by individuals who possess the skills to bring about major change in very sophisticated and complex institutions. While change must come about with alterations in the way schools and colleges recruit students, design and offer curricula, conduct research and care for patients, change of this fundamental sort will require accommodation among many constituencies both in and out of the health professional school. Across the professions, there are eight broad strategies, five targeted at health professional schools and three at external agencies, that can facilitate the development of a comprehensive plan for reforming the schools.

Schools Must Increase Curricular Emphasis on the Community's Health

Practitioners of the future will need a thorough grounding in the societal and environmental determinants of health and models for the provision of health care for the community, both because such an understanding is an essential component of their treatment of individuals, and because all health professionals share a responsibility to understand, maintain, and improve the community's health. To provide such a grounding, schools must ensure that their students learn the relevant information (see the following section) and receive the appropriate experiences that foster a concern for the community's health. Learning in a community environment; observation of role-model faculty in primary care practice settings; focus on preventive aspects of care; participation in community coalitions of health and lay personnel; and the development of new analytical skills are all strategies to strengthen students' links with the community and concern for the community's health.

Schools must begin by developing their capacity to understand the health care needs of the communities they serve. This process of defining that community, developing measurements of health status, assessing the health delivery system and role of health professionals in it, and designing ways to improve it will be valuable in several regards. First, a student's education will reflect community needs. Second, the entire program of the professional schools, including research and service, will be more relevant to community needs. Finally, the public will be better served in terms of quality and efficiency of care.

An obvious strategy for emphasizing the community's health is to "adopt" the population within the immediate vicinity of the health professional school, much as teaching clinics "adopt" individual patients. Many health education institutions have not actively pursued roles as providers of health services within these local communities, preferring to regard themselves as institutions focusing principally on research and scholarship. Similarly, health professional education institutions seldom have regarded themselves as advocates of the community's health and generally remain unengaged in policy discussions that have implications on the health of communities.

When direct service to the community is not feasible, teaching clinics should draw on the refined environmental analysis, described above, to develop learning environments that more closely simulate community settings and experiences. The movement towards the use of standardized patients represents a beginning, but it should be advanced to further simulate the real demands on health care professionals as clinicians and policy makers.

Schools Must Redefine Their Core Curricula

Although each professional school is free, within limits imposed by its accreditation, to define its own curriculum, it is clear that there is a need across all professions to critically examine the content of such curricula. The past four decades have witnessed a startling growth in knowledge of the basic, diagnostic, and treatment sciences. This expansion has left every health professional curriculum crowded and without a well integrated common ground representing what a faculty believes to be the fundamental skills, competencies, and values that define professional life. There are few images of the whole health professional; only sums of sub-specialty parts.

Redefinition must begin with the difficult process of gaining agreement about the entire enterprise. This may be aided by general involvement of the community and an examination of its needs. Perhaps the community should help clarify what a profession holds as important. The biomedical sciences that currently comprise the bulk of didactic professional curricula need to be supplemented, possibly in some instances supplanted, by the social sciences, including behavioral science, epidemiology, and information science. This reexamination must occur both on an individual school level and professional level and its focus should be on the skills and knowledge needed to function in the next two decades and beyond, rather than the skills and knowledge that have defined a profession, or an institution's graduates in the past. Attention to communication and interpersonal skills necessary for effective teamwork is especially vital if practitioners are to care for the community's health, emphasize health promotion and disease prevention, and deliver cost-effective care.

Schools Must Reform Their Educational Processes

Despite the development of a variety of new teaching-learning approaches over the past two decades, the preponderance of all health professional education is characterized by the lower taxonomic levels of learning such as passive presentation and rote memorization of facts. The need to integrate the basic and clinical sciences has been a continuing theme in health professional education for decades. While application and synthesis of this information is expected of students, methods for achieving these ends are seldom taught formally. A concomitant problem is the evaluation of students' clinical performance, which currently relies to a great extent on objective tests of retained knowledge and poorly standardized subjective assessments. Also, as the creation of new information outpaces the students' ability to memorize it, the need for attention to skills in organization and retrieval of information increases. Not only does this approach to education inhibit the development of many of the higher-level skills essential to practice, it also fails to provide the practitioner with the skills and attitudes necessary to engage successfully in the lifelong pursuit of new knowledge and skills. The maintenance and assessment of continued competence of practitioners has not been a principal mission of health professional schools, and it merits their increased attention. The use of new technologies for "distance education" are indicated. Finally, as the Nation's demography changes and society's expectations of health professionals evolve, renewed attention to the recruitment and admission of students to health professional schools is warranted.

Schools Must Establish and Measure Educational Outcomes

There is growing demand for enhanced accountability throughout health care delivery and education. Health professional schools must embrace these new demands as an important resource to assist in the process of changing education and improving the skills of their graduates. Education has typically rejected the development of teaching and learning outcomes as too reductionistic and too difficult or impossible to implement. These objections must be overcome.

Every health professional school must clearly state its mission (tied to community needs), program objectives and outcomes, both immediate (following each formal educational experience) and long-term (satisfaction of student/professional, performance on job). Schools must also devise innovative and relatively unobtrusive ways of measuring educational outcomes. The results of these evaluations must also be used to continually improve the educational program or encourage new educational objectiveness to better meet changing community needs. Finally, these measures must be used to direct faculty development resources to improve the educational skills of individual faculty members and to reward those who make significant contributions to the teaching-learning process.

Schools Must Establish Effective Management and Development Systems

Accomplishing the changes suggested in the foregoing strategies is a challenging prospect. It will require fundamental reconsideration of the organization of health professional schools and the skills of the managers and leaders who direct their affairs. Schools must ensure that their faculty have the necessary skills to employ new teaching methods successfully, to model the care delivery process appropriately in new environments with new expectations, and to evaluate their students' higher-level skills adequately. Further, schools must put in place the administrative mechanisms that will lead to responsiveness, creativity, and the willingness to innovate in both educational and administrative domains. Leadership development, institutional strategic planning, ongoing outcomes assessment, and like strategies are all indicated.

Each school must make a learning organization of itself. What are its goals? How is it doing in accomplishing those goals? What new skills are needed to improve its performance? What new structure can make more efficient use of resources or enhance the achievement of goals?

Professional Associations Must Participate in the Development and Implementation of New Professional Definitions

Significant changes in health professional education cannot be accomplished without the active cooperation of the principal professional associations. These associations' recognition of the need for changes within the professions will help ensure acceptance of the efforts of individual professional schools and of the profession as a whole. Professional associations will be key players in discussions regarding the scope and focus of practice by virtue not only of their role in accreditation, but also through their influence on State professional licensing boards, which will determine ultimately the methods for establishing continued competency of professionals.

Specifically, professional associations must support and actively promote the principle of lifelong learning and work to implement mechanisms to assure the continued competence of all professionals. Further, professional associations must endorse increased attention within the profession to the concern for maintenance and improvement of health, particularly the community's health, and seek mechanisms such as changes in accreditation and licensure to facilitate increased emphasis on this professional focus. Finally, professional associations, in concert with educators, must develop and implement sound and attractive career pathways within and across the health professions.

States Must Address Issues in Credentialing of Personnel, and in the Finance and Governance of Health Professional Education

The greatest opportunities for achieving changes in the external environments of health professional schools lie within the State governments. Three broad areas that influence health professional education are essentially controlled at the State level. These areas are credentialing of personnel and the finance and governance of educational institutions. States can influence the environment through credentialing in several ways, all of which represent degrees of elimination of domination of the credentialing process by the interested professions. For example, States can ensure that specific licensing authorities are answerable to overall consolidated boards of professional regulation. Professional influence also can be reduced by uncoupling the licensing process from professionally determined accreditation requirements and by beginning to license by task or task set, rather than by profession. Subsequent relicensure should be based on demonstration of continued competence to perform the specified tasks.

A clear avenue for changing the educational environment through the financing of health professional education is to consider more carefully the need within the State for various health professionals during the distribution of State supported funds, and during the determination of tuition levels. States also might influence the environment by letting tuition rise while establishing loan forgiveness programs tied to public service commitments. Under the rubric of State governance, States can improve the coordination of health-related agencies.

A policy advisory council or other method for establishing a focus for health issues with educational ramifications would be the desired outcome of improved coordination among agencies such as planning groups, policy bodies, licensing authorities, and boards of health. A complete database covering State health personnel and population health status could be an important outcome of such coordination, and such data could then guide policy decisions affecting health professional education.

The Federal Government Must Encourage Change in Health Professional Education through Existing Policy and Financing Arrangements

Federal initiatives in health professional education will not come in the form of direct economic support of the educational enterprise. However, the ways in which patient care and research are financed are not policy neutral. Ongoing Federal Government programs provide viable opportunities for leverage in helping health professional schools accomplish their objectives for change. For example, the redirection of a slightly larger portion of current Federal funding of biomedical research to inquiry into policy issues, treatment outcomes, and educational methods would be beneficial, as would demonstration projects for some of the most promising new educational approaches. Enhanced interagency cooperation among those several entities already involved in various aspects of health professional education, such as the Bureau of Health Professions and the Council on Postsecondary Education Accreditation could facilitate anticipated changes in accreditation and licensure. Technical assistance from Federal agencies also should help professional associations fulfill their roles in the change process.

The development of a more primary care oriented system will require that health professional schools begin to make the adjustments described above. There will be numerous reasons that the schools will offer as to why they will be unable to carry out these changes. Principle among these is the lack of change in the delivery and financing policies of the Nation. However, the schools now have a clear sense of the direction of the response that will be needed of them. They must seize the initiative and push for the decade of reform that will be needed.

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Gatekeeping and the Primary Care Physician: Ethical and Practical Considerations

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Perhaps there was a time when physicians were not gatekeepers in any significant sense. Relative ignorance and lack of technology before the mid-19th century left the physician little to offer beyond folk remedies and solace. Indeed, the allopathic doctor could take legitimate credit for so little that many other groups could and did lay comparable claims to healing (1). Neither quality nor duration of life were likely to be affected by the services that physicians did--or did not--offer.

Despite such earlier innovations as anesthesia, aseptic surgery, and sulfa, medical technology did not expand dramatically until after World War II. The physician's role since then has changed radically. Whereas the AMA claimed confidently in 1940 that 85 percent of medical problems could be handled by a general practitioner "without any other equipment than the contents of a handbag," the late 20th century has provided the medical profession with a vast armamentarium of effective diagnostic and therapeutic modalities (2). At the same time, medical specialists proliferated and their ranks grew to such an extent that there has been persistent concern about the relative paucity of primary care trained doctors (3,4). In this complex scientific and technologic milieu, the primary care physician and his colleagues inevitably and necessarily began to serve as gatekeepers, facilitating or limiting access to tests or treatments as he felt the patient's condition warranted (5).

By the 1980's, physicians' decisions controlled roughly 80 percent of the costs of medical care in the United States (6). The tendency of medical care expenses to rise faster than the Gross National Product and to absorb increasing proportions of the tax dollar through Medicare and Medicaid expenditures continued to fuel the search, begun under Nixon, for some means to limit health care costs (7,8). Furthermore, access to care had not improved despite the enlarging pool of physicians. Each physician was doing more for each patient rather than increasing the number of patients that were actually being seen (9). In response to the escalating costs and intensity of care, entities such as health maintenance organizations assigned the physician a new role--that of the cost-conscious gatekeeper. No longer serving simply to open or close the gate to laboratory, radiologic, hospital, surgical and pharmaceutical interventions as he saw medically fit, the physician in this altered gatekeeper role carried the responsibility for weighing the economic implications of his decisions and those of his patients (10,11).

Is All Gatekeeping Morally Hazardous?

At the outset, it is worth noting that gatekeeping per se is not only justifiable, but essential (5,12). Physicians have a legitimate negative gatekeeping function in that they must think through and rule out the impossible or unlikely diagnosis, the inappropriate drug or diagnostic test before even beginning to plan with a patient. Likewise, they are duty bound to discern and recommend procedures that will clearly benefit the patient--to be a positive gatekeeper. These intellectual tasks are precisely what the patient expects of the competent physician. In either instance, the doctor's fidelity to the patient is potentially jeopardized only if his decision is based upon interests or concerns other than the patient's own welfare (6, 12-14).

The differential in knowledge between doctor and patient, the complexity of the health care enterprise, the patient's own vulnerability when ill, and the intimacy entailed by the medical history and physical exam all require that the patient be able to trust his physician. This need for trust creates the profession's fiduciary obligations. First, the physician has a duty to be competent, both in knowledge and skills (13). Second, the physician is expected to care for the patient, even if so doing inconveniences her or puts her at some personal risk (12-14). And lastly, the physician must place the patient's interests above not only her own interests, but those of others as well (12-17). It is this last contention--that the physician must always attend to the needs of the individual patient sitting or lying before her, above and beyond all other considerations--that has most challenged the morality of gatekeeping as it is practiced within the context of the medical marketplace.

Until recently, the typical reimbursement system for physicians in the United States rewarded performing the marginally effective, low-risk procedure or ordering the additional laboratory test to confirm suspected good health. To the extent that patients carried adequate health insurance, they were protected from perceiving the costs of their choices, while the physician reaped the financial benefits therefrom (7). Fee-for-service medicine thus always presented the physician with the opportunity to both satisfy the patient and earn a healthy income, especially as long as any proposed interventions were of low risk (10). Historically, it has been difficult to discern the point at which patient benefit took second place to the offsetting of office overhead. We have relied on the virtue of the physician as the primary guardian of the fiduciary relationship (12,13,14).

Nevertheless, positive gatekeeping carries the potential to run afoul of the doctor's fiduciary responsibilities. Consider for example the physician who benefits financially from the laboratory test done in her office, or generates more referrals for herself by referring patients to a free-standing surgicenter owned by colleagues. If her medical recommendations are influenced by such considerations to the disadvantage of patients, we would all agree that she violates the proscription against conflict of interest (17). Furthermore, patients' belief that doing more means better care does not necessarily support the medical propensity to act rather than to wait (18). Recall the wise warning "Don't just do something, stand there!" False positives result from tests aimed at uncovering problems that have a very low probability of being present. These results in turn often cause alarm and necessitate additional, and sometimes invasive, testing to confirm the inaccuracy of the initial finding. Overly aggressive use of certain surgical procedures likewise places patients at unnecessary risk (19).

There are antidotes to the excesses of positive gatekeeping, however. Patients have the moral and legal right to reject a diagnostic test or therapy (20,21,22). In the case of positive gatekeeping, the physician's choices are public, at least to the extent that they are spoken to the patient, appear on an order sheet or result in an operative note. They are therefore open to scrutiny. Granted, the patient may not be sufficiently sophisticated or self-confident to question a doctor's recommendation or the reasons for it. Only the most skeptical consumer is likely to probe for self-serving reasons behind his or her physician's advice. For all the press to the contrary, patients are still quite compliant and unquestioning where their personal physicians are concerned (23). But articulating a recommendation at least allows the patient to question the reasons for that advice and to pursue an informed decision.

To date, physicians, and for that matter patients, have lived rather comfortably with positive gatekeeping, although suspicion about the potential for abuse has led to increasing governmental regulation (24). The proliferation of negative gatekeeping, on the other hand, when invoked in the name of cost-containment, has caused considerable alarm. In the view of many, the physician cannot both act as society's agent and claim that the needs and preferences of her patient are, as they should be, her primary concern (15,16,25). Furthermore, these critics would argue, negative gatekeeping is more invidious than positive gatekeeping. While the physician who swings the gate open must tell someone what is about to be done, the negative gatekeeper may conceal from the patient and others any options that he considers to be non-cost-effective (16,25,26).

For example, the young otherwise asymptomatic and well insured patient with weight gain may well be offered thyroid function tests by the fee-for-service physician who could argue that 1) weight gain is occasionally due to hypothyroidism; 2) the test is low risk; and 3) some lawyer somewhere might sue him later if he does not. The test is not hidden from view; the patient must have blood drawn for it to be done. And the patient is free to decline it.

Now consider the same scenario, except that the patient belongs to an insurance program that reimburses his physician on the basis of a capitated agreement that includes laboratory tests. The physician judges the hypothyroidism to be an unlikely etiology of the patient's complaint. He never mentions the diagnosis, never orders the test, and the patient, unless medically sophisticated, is none the wiser. In the first instance, the physician's plan, if not all of its motives, is available to the patient to review. In the second, it is opaque. Of course, in this particular case, one could argue that the negative gatekeeper is providing responsible care. But critics would point out that the patient's values played no role in the decision making process, and that there was no opportunity to consent to or reject the marginally valuable test. That is not to say that patients' preferences always triumph. Many physicians decide against throat cultures or antibiotic treatment for clearly viral pharyngitis, even when patients request them. Those who generally object to negative gatekeeping would point out that in such cases, patient safety and proper medical practice provide morally acceptable grounds for the physicians' actions. In the case of the gatekeeper's choice to avoid thyroid function tests, however, part of the rationale for rejecting the test was economic; the physician, in the critics' view, experienced a clear conflict of interest.

If an option is not disclosed because it would be medically egregious to do so, no ethical problem exists. However, as the case above demonstrates, negative gatekeeping and cost-containment are not solely directed toward the elimination of utterly unnecessary interventions (27). A major goal of cost-containment strategies such as clinical guidelines is to identify thresholds of cost-effectiveness: points at which the marginal benefit no longer warrants the additional cost (28,29). By definition, a procedure of marginal benefit will offer a positive outcome in a very small number of patients. Negative gatekeeping, if implemented as silence about the intervention of marginal benefit, denies individual patients the option of deciding whether or not they wish to resolve this marginal uncertainty for themselves.

As a policy matter, those engaged in studies of the quality of care acknowledge that underservice is by its nature more difficult to detect than overservice (19). After the fact, we can review procedures to determine if they should have occurred. It is a far more difficult research process to identify all those who failed to receive an appropriate intervention. Given the aforementioned concerns regarding hidden underservice, as well as the potential threat to fidelity raised by conflicts of interest, it is clear that cost-containment "at the bedside" poses particularly nettlesome moral questions.

Is There a Moral Justification for Cost-Conscious Gatekeeping?

Physicians might cling to the belief that they have made each and every patient their first priority, but in fact no relationship between doctor and patient has ever been completely protected from outside pressures. There have always been other patients with claims on the physician's time and energy, not to mention the legitimate expectations of the physician's family and the need for sleep! Furthermore, physicians have been long accustomed to rationing resources in the face of dire scarcity, for instance, allocating limited intensive care beds to those of their patients who most need them. The latest intrusion is more amorphous, however; it comes from society at large.

The argument in favor of cost-conscious gatekeeping (hereafter referred to solely as gatekeeping) is simple: the exponential growth of what is technologically possible coupled with Americans "romance with medical science and medicine" has exceeded our social capacity to respond, irrespective of significant medical benefit to all individual wants and needs (26,30-32). Advocates of the gatekeeper model argue that physicians must engage in the process of setting limits: they must change the way they have, over the last three decades, made decisions about the appropriateness of care (10,26,27). According to this view, the individual patient can no longer be the doctor's sole concern.

While acknowledging the need to limit social spending, some have argued that the duty to fidelity is best protected by distancing the physician from the conflict over the costs of care. These observers have in general proposed that professional groups and payors should jointly set professional standards to guide coverage decisions; the individual physician can then remain aloof from the cost-containment fray (15,16,25). If and when the physician is "forced" to say no, he can legitimately claim that he and the patient are together constrained by the choice of society as a whole to make a diagnostic or therapeutics intervention unavailable (26,33).

Such a system certainly seems to get the doctor out of the business of saying "no" for other than purely medical reasons. But it also renders his "yes" meaningless, for his recommendation carries no weight unless it confirms the position of the distant decision makers (26). Furthermore, the explicit but inevitably broad general policy will be insensitive to the individual environment--perhaps mandating what is in a given person unwanted or unnecessary, while refusing what is generally a marginally cost-effective intervention but in an occasional individual extremely efficient (26,27). The more sensitive the algorithms become to individual scenarios, however, the more the physician essentially delegates the practice of medicine to policy makers.

Aversion to such loss of clinical autonomy, as well as the belief that fidelity means having to place an individual patient's interests above all others, continues to be a common argument against any form of medical involvement in cost-containment beyond the elimination of completely unnecessary interventions (5,12,26). It is unlikely, however, that such efforts alone will be sufficient to place health care costs in proper relation to other social needs (27,31).

Any arrangement that makes the individual patient's interests the only rightful concern of the physician assumes that neither the physician nor the patient has any legitimate social obligations that should figure in their calculus (34). In such models, the patient is empowered to wield his physician like a shield against the demands of the general good. Yet, even though a doctor serves his patients one by one, he has obligations to his collective practice, not to mention a more general obligation to preserve the public health (35).

The resources of society are finite; health care dollars used for one patient will not be available to another. Expanding resources devoted to health care will make them unavailable to spend on some other social good, perhaps food or housing. Fidelity to the individual patient demands that the physician avoid exploiting the patient. But, surely, fidelity does not require the physician, on behalf of one patient, to "poach" resources to which many others also have legitimate claims (26,36).

Thus, balancing one's patient's claims against other pressing concerns is not new to physicians, nor, for that matter, is rationing. The role of negative gatekeeping--of limiting access to health care even in the face of marginal need--has been justified on the grounds that 1) cost-containment is unavoidable; 2) distancing decision making from the physician significantly undermines the practice of medicine and deprives her and the patient of individually sensitive decision making; and 3) fidelity requires that physicians to be self-effacing but does demand that they exploit some for the benefit of others. But other troubling issues remain.

What about the patient?

To this point in our discussion, the patient has remained free to demand what we should expect the conscientious gatekeeper to refuse to offer. True, patients are emotionally vulnerable, in need of care and ill-equipped educationally to identify on their own which interventions would be most helpful to themselves, let alone cost-effective on a social scale. But do these characteristics relieve patients of all obligations other than those of self-interest? Consider the following case. A patient, Mr. H, requests magnetic resonance imaging (MRI) for headaches he has had, unchanged, for 15 years. When the physician declines to order the MRI, on the grounds that the history and physical make anything other than musculoskeletal headache extremely unlikely, the patient becomes irate. The test seems to pose no risk and will reassure him. How can his doctor deny him access!

It is worth noting that Mr. H chose to enroll in a health maintenance organization (HMO) because it offers him lower premiums, while permitting unlimited access to primary care. Reduction of marginal testing is one strategy by which HMO's can offer such benefits, while remaining financially sound (10,38). Mr. H's physician judges the MRI to be an expensive and very marginally beneficial intervention. Previously, it was argued that the physician in this situation is not obligated to fulfill the patient's request. Does the patient have a commensurate obligation to cease and desist from his demand?

At least some would say "yes." While we should not expect the patient to know in advance the relative merits and costs of an MRI in his case, we can expect him, once fully informed, to accept his responsibility to preserve the medical commons (34). A fully autonomous person is also one who is responsible for his actions and for their impact on others. Mr. H was sufficiently concerned about costs to decide to join the HMO. If he made that decision freely (e.g., his employer did not make it for him) and if the HMO were honest in its publications about the gatekeeping role of its physicians and the need to limit marginal utilization, then Mr. H. has consented to participate in a system of cost-containment (34). He must now bear the responsibility entailed in that decision, rather than urge his physician to raid the collective resources of the HMO on his behalf.

Obviously, specific political and social conditions would have to obtain before one could expect patients in socially funded programs such as Medicare or Medicaid willingly to forego marginally beneficial care out of concern for the welfare of the whole. A detailed discussion of those circumstances is beyond the scope of this paper. Nevertheless, the case of Mr. H. illustrates the point that there are in fact conditions under which patients are duty bound to share the burden of closing the gate (10,34).

Paradigm Shifts Carry Costs

A model that asserts that patients have a moral responsibility to some, albeit minimal, level of self-denial flies in the face of both free market economics and the consumer movement of the last quarter-century (39). In a free market, the consumer should seek to maximize his own utility. If health care were in fact an ideal market (it is not) and if the HMO patient's contract did not explicitly exclude MRI's in cases like his (the guidelines model) or demand that he passively accept his physician's recommendations, the patient would improve market dynamics by pressing his demand for an MRI (39). The swing toward patient advocacy and away from benign paternalism in medical ethics also supports patients' expectations that their physicians accommodate any reasonable request.

A physician who demurs on grounds of "medical appropriateness" to provide requested services, especially those that present little or no risk, will be perceived as retreating to the "father (or mother) knows best" model of old, or as the captive of the payor. Even the physician who points to guidelines created by others might face the query "On what grounds was this particular threshold of cost-effectiveness determined to be appropriate?" If clinical guidelines are established exclusively by medical consensus, the profession as a whole will be viewed as returning to paternalism. The physician who complies is then guilty by association.

The gatekeeper thus occupies an uncomfortable even if morally justifiable position. Patients are unlikely to abandon their recently achieved status as autonomous consumers with the right to participate in decisions about their own care. Nor is society likely to look the other way while health care costs rocket upward. The primary care gatekeeper will have to learn how to function in a reconstructed social paradigm of the doctor-patient relationship that demands respect for the patient, on the one hand, and for limited resources on the other.

At the very least, the physician is going to have to invest substantial time to educate each patient. Further, she must teach the patients not only about the nature of their conditions, how to manage their symptoms, and so forth, but she may have to discuss medical economics as well.

Gatekeeping may reduce dollars spent on technology and specialty referrals (38,40). There is also good evidence to suggest that gatekeeping, as it has been practiced to date, has not impinged on the quality of care (41-43). But we should not delude ourselves with thinking that it comes without cost. Respect for patients requires the physician to provide each patient with a clear understanding of the basis for her recommendations, including the reasons for not offering a test or procedure the patient might expect (13,20,25,34). Compassion as well as the obligation to do good, require attention to the patient's anxiety. Careful listening and physical evaluation may well offer the comfort the patient otherwise seeks to find in a test. But, effective patient education and sympathetic listening take time, emotional energy, and training. It is unreasonable to expect primary care physicians to serve as ethical gatekeepers without acknowledging and accounting for these very real costs of limiting patients' use of health care technology.

Toward the Practice of Morally Acceptable Gatekeeping

The primary care physician may not be the only physician thrust into the gatekeeping role, but she is sure to be among the most visible, particularly as managed care relies on reducing referrals to specialists as a means of cost-control (40). The ethical character of her role will depend upon her own skills and on the system within which she functions.

Four factors may render the entire enterprise morally suspect. First, incentive systems that override the constructive tension between patients' preferences and collective cost concerns through egregious appeals to the doctor's economic self-interest clearly introduce unacceptable conflicts of interest. Second, if the physician's skills do not match the demands placed upon her by her employer to limit specialty care, the duty to provide competent care is breached. Third, if her marginal decision making is idiosyncratic or ill-informed, then her patients stand to be treated both incompetently and unjustly in comparison to those of her peers. And lastly, if the physician is unable or unwilling to assist the patient in coping with uncertainty, she defaults on the duty to do no harm; she has denied him an intervention that promises some comfort and offered nothing in return.

Financial incentive packages are commonly used to encourage physician involvement in cost-effective care (44-46). Emerging evidence suggests a clear association between reimbursement strategies and clinical decision making (47-49). To ensure ethical gatekeeping, we must learn much more about how such reimbursement systems influence physician judgement and when, at the margin, they create incentives that tip the balance too far toward physician self-interest and away from both patient and social advocacy (50). Difficult problems of definition will demand attention. What, for example, would count as "too much" self-interest?

On another level, policy makers must scrutinize the role of the profit motive in organizations (whether they are technically for profit or otherwise) whose net incomes are realized in part by marginal underservice. This is essential because the justification for asking patients and physicians to depart from their historic patterns of decision making rests on the assumption that the savings would serve other critical social needs and not the wealth of shareholders, or the glory of the board of trustees (51,10).

Second, systems that expect physicians to limit access to specialty services must ensure that the primary care physician is adequately trained to make appropriate triage decisions and to provide approximately equivalent care when the patient is denied referral (11,10). Health care organizations, like physicians, have moral obligations (5). When they deliberately construct barriers to the usual standard or patient expectation of optimal care, these entities assume a corollary duty to protect the patient's well-being. In addition, the fact that patients may often be unaware of the primary care/specialty care trade-off accentuates the fiduciary obligation of the organization not to exploit their patients' ignorance. Primary care physicians who are not properly trained in outpatient gynecology, dermatology, or orthopedics run two risks: undermining the patient's welfare if they deny referrals that are needed, or costing the system dollars through excessive and unnecessary dependence on specialists. HMO's and other models that rely on gatekeepers are morally and prudentially bound to assess the competence of these physicians (10,51).

If and when primary care physicians do refer, they have an obligation to protect the patient from unnecessary harms. Within the context of the fiduciary relationship, therefore, physicians must not knowingly refer a patient to a specialist whose skills they doubt. An organization that restricts physician's referrals to a specified few, but does not adequately control the quality of the specialists it recruits, may place its physicians in an untenable ethical position. Where primary care physicians are clearly concerned about the quality of a particular source of referral care, they would seem to be duty bound to share their concerns with patients and insist on a change in the referral relationship. The obligation not to exploit the patient demands no less. It is worth noting, however, that contention over specialty care will beg the question of how the quality of referral medical care should be evaluated, a critical issue for both gatekeeping physicians and for the organizations with which they work.

Gatekeepers have more flexibility to respond to individual patients' situations than physicians who refuse to consider cost and delegate that authority elsewhere. Yet physicians who engage in idiosyncratic bedside judgments risk including irrelevant or unjust variables in the decision (52). Familiarity with current medical literature as well as participation in group decisions will help to ensure that the physician's recommendations are well-grounded in generally accepted clinical principles (6). Large organizations that provide strong leadership and high levels of interprofessional communication are well situated to properly maintain agreed upon standards of care (53). The development of clinical guidelines along with active quality assessment and feedback to clinicians about their performance, as well as peer review, further provide the physician with a framework within which to provide sound, cost-effective care (10,59).

One note of caution must be sounded here, however. Clinical guidelines themselves are not value-free. On the contrary, they are explicitly designed to reflect at minimum a risk/benefit calculus and some have considered cost as well (54). The point at which a guideline chooses not to recommend a procedure thus represents a judgment about the worth of the investment relative to the outcome or information obtained. Although a number of models have been proposed, there is far from general agreement about how to set such cost-effectiveness thresholds (55-58). A great deal of empirical and theoretical work remains to be done. The conscientious gatekeeper who relies on clinical guidelines still cannot escape either clinical uncertainty or ethical ambiguity.

Finally, and perhaps most importantly, the doctor-patient relationship will require continued attention. When we as clinicians ask patients to forego a test that may confirm a diagnosis, or rule out another, we ask them to bear the burden of uncertainty. The toll of unresolved concerns should not be underestimated. If patients are to accept this responsibility, they must not only trust that the physician has not gone too far in her zeal to protect social resources. They must also trust that the physician will take the time to educate them, to counsel them, to help them to stay healthy, and to follow them over time so that changes in their clinical situation can be fully appreciated--in short, to provide primary care (59). Physicians will have to be trained in the skills required to say no, as well as those involved in saying yes. Investigation is also needed of the impact of increasing demands for primary care productivity on the capacity of physicians to engage patients willing cooperation in controlling costs. As Ann Somers perceptively noted almost a decade ago "if in the effort to cater to an exclusive concern with cost cutting we permit ourselves to go along with a denial of free choice, even if for only the poor and the elderly, without any compensating gain for the patient, it will turn out to be a very bad bargain indeed, not only for the patient but for all health professionals involved in primary care" (59).

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Recruiting Practitioners for Inner-City Primary Care: Notes from the Field

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Introduction

In many low-income, inner-city communities, the shortage of insurance and financial resources is not the only barrier to access to primary care services. There is often an absolute shortage of providers. That shortage has worsened in recent years, as general and family practitioners have retired without being replaced, and institutional providers have not been able to increase staffing commensurate with increased demand.

Developing or expanding primary care services in such communities thus requires the aggressive recruitment of family practitioners and generalists in adult and pediatric medicine, as well as obstetricians. But this recruitment must be accomplished in a less than favorable environment, characterized by a generalized national shortage of physicians in those specialties, the diminishing interest of young physicians in entering primary care training programs, and the special obstacles experienced by inner-city communities, including high costs, fear of crime, and funding difficulties. This paper will both characterize and analyze the problem and describe some strategies now being successfully employed to overcome them in primary care development efforts in New York City and elsewhere.

While most of this paper draws on the existing literature, some of the experiences reported here have resulted from the primary care development efforts of the United Hospital Fund of New York. The Fund, the Nation's oldest federated charity, seeks to shape the delivery of health care in New York City through an integrated program of grantmaking, research, conferences, publications, and technical assistance. For the last three years, the development of new primary care services in underserved areas of the city has been a major priority of the Fund.

In New York City, as elsewhere in urban America, there is currently a shortage of all primary care providers, including physicians, nurse-practitioners, nurse-midwives, and physician assistants. For purposes of brevity and narrative simplicity only, however, the bulk of this discussion will focus on the physician shortage. The educational issues surrounding non-physician providers are sufficiently complex to merit separate treatment by others more expert than we, while issues of recruitment and retention are similar to those we will be discussing when we refer primarily to physicians.

Of the 49,468 physicians practicing in New York State in 1990, 16,543, or just under one-third, were in a primary care specialty (1). Only 25 percent of the 13,135 residents in training in New York State in 1988 were training in a primary care specialty (2). And in 1991, training programs in the United States filled only 75.2 percent of the first-year primary care residencies compared with 93.7 percent of all surgical specialties (3).

A health professional shortage area (HPSA) is defined by a population-to-primary care practitioner ratio of 3,500:1 or more (or a lesser ratio if unusually high need or insufficient capacity is demonstrated). There are currently about 2,000 designated primary care HPSA's, two-thirds of which are rural, with a calculated total primary care physician deficit of about 4,400 (4). Yet in one New York City community alone, a low-income population of 84,263 is served by 9.3 full-time equivalent primary care physicians for a ratio of 9,060:1, or a deficit of 15 providers (5). Citywide, the deficit of providers is clearly in the hundreds, and there is no reason to believe that New York City is worse off in that regard than many other major metropolitan centers--indeed, because of the scope of its medical education enterprise and a longstanding civic commitment to support health services for the poor, New York may be better off than many other urban communities.

In our efforts to develop primary care services in this city, we hear two contradictory messages from providers and potential providers. Some say, in effect, "build it, and they will come." Others believe that, no matter what you build, the physicians just don't exist. In trying to determine which of these statements is true, we set out to answer three questions: 1) If we build it, what will it look like? 2) How can we increase the "they" who are supposed to come, i.e., the pool of providers from which to draw? 3) Once we build it, and increase the pool, how will we get them to stay?

This paper will explore the perceived expectations of medical students and house staff, and compare them to the reality of inner-city primary care along three dimensions. The first is medical education: how and what medical schools teach and how residency programs continue what the schools begin so well. The second is economics: how primary care doctors are paid, how the system is reimbursed for the care they provide, and how lack of funding affects patient care. The third, and perhaps the most difficult to bring into focus, is the quality of professional life, including a physician's relationship to his/her peers. We will then explore strategies for improving the current system for training, recruiting, and retaining primary care physicians for practice in the inner city. Last, we'll address some issues surrounding use of mid-level practitioners in this environment. We hope, in the course of that discussion, to make it clear that there is no one solution for achieving these goals, but many incremental strategies for addressing the multidimensional issues related to primary care recruitment. To incorporate medical education, economics, and quality of professional life, and to develop immediate as well as long-term solutions, we'll argue that strategies must be flexible and implemented at various stages of education, training, and practice.

Optimal Practice Settings

Future physicians entering medical school may have only indistinct notions of what life as a physician is like, but the mythology captured by a Marcus Welby, MD, still clearly has some hold on the popular imagination. Welby was a family doc, who practiced in his home, maintained hospital admitting privileges, had an ongoing relationship with all his patients, was treated with the utmost respect by his colleagues, and seemed to be earning a better than decent living.

In 1992, medical students are taught that there is prestige in sub-specialties, and that generalization implies no specialization (6). Academic medical centers emphasize the application of science and technology to the treatment of disease in individual patients. Throughout both undergraduate medical education and residency training in such an environment, future doctors are exposed to a different culture than community-based medicine, and instead learn to emphasize research and the delivery of tertiary care. They learn that there is a specialist for everything and that doctors fall within an hierarchy of specialties. They learn that inpatient care is more important and more remunerative than outpatient care. They are often pulled from the clinic to attend an inpatient. It is rare that the reverse occurs.

In spite of what doctors learn in medical schools and academic medical center residencies, however, a number of them emerge with a desire and willingness to provide primary care. But they also have expectations about practice arrangements, lifestyles, and incomes--at least some of which may be formed in reaction to the income levels and, more importantly, debt levels residents now take for granted. Doctors expect to earn a competitive income. If they choose to start a practice, they expect to be reimbursed for their charges. And they expect the simple amenities of their hard-won professional status, which include an office, a place to hang their coat, and a parking space.

Central to what physicians of all ages look for in a practice is best defined as quality of professional life. They very much want an academic and hospital affiliation. A hospital appointment is essential to provide continuity of care for their patients, as well as to provide an opportunity to maintain an ongoing relationship with their peers. They want a continuing education program to ensure that they remain on top of new advances in the field and, to test and hone this updated knowledge, they want "interesting" cases. And Marcus Welby hasn't disappeared entirely; doctors want a quality relationship with their patients, and central to this relationship is the assumption that their patients are compliant and interested in their own care. Last, but certainly not least, doctors want to feel safe in their practice.

What Doctors Find in Inner-City Communities

The lessons taught in medical school and residency have a profound effect on what doctors do when they go out into the real world. The dichotomy between what they have learned to expect and what they find, or expect to find, in inner-city primary care practice constitutes the most obvious deterrent to practicing primary care in the inner city.

What doctors find in the inner city are real patients who present with HIV/AIDS, substance abuse, TB, and numerous other diseases reflective of poverty. Contrary to Marcus Welby's practice, they find that they're expected to adhere to productivity standards, which limit the amount of time they can spend with their patients in favor of increasing the number of visits. Such standards make patient/doctor interactions less substantive and ongoing relationships difficult to achieve.

In addition to overwhelming medical problems, physicians find that the scope of their patients' needs are vast. Many patients require assistance in obtaining housing and social services and display symptoms of social distress such as domestic violence, child abuse and neglect, crime and violence.

Financially, what inner-city primary care physicians find is often not much more appealing. When the national average net income for all physicians is $145,000, and the cost of living in cities such as New York or Boston is so high, the $65,000 salary offered by many New York City health centers is not only well below the rest of the market, it's also inadequate for the style of living to which young physicians hope to become accustomed, not to mention their need to repay debt (1). This income level also seems especially low when compared to the salaries of classmates who pursued careers in the surgical specialties and are compensated at more than twice the salary of a primary care physician, or in the medical specialties, which earn roughly 50 percent more (7).

Any doctor foolhardy enough to attempt to establish a private practice in the inner city soon learns that Medicaid, which covers as much as 60 percent of the patients in some inner-city communities, reimburses an office visit at $11 in New York State, and a hospital visit at not much more than that. And much of the rest of the patient population is likely to be uninsured people for whom even those small amounts are too much to pay.

Primary care providers are also frequently expected to tolerate poor working conditions, seeing patients in deteriorating space, with a lack of supplies and dated equipment. But most distressing for these physicians is the quality of their professional life. If they practice out in the community, where they are most needed and best utilized, they risk feeling isolated in their practice. The camaraderie of residency does not follow them into practice, and often there is no one to bounce ideas and questions off of, or even to eat lunch with. Coupled with this is limited access to either formal or informal continuing education. Worst of all, physicians discover that they are not always safe in their practice, as some members of the community carry weapons and exhibit violent behavior, and needles, syringes, and medications must be kept under lock and key.

Long- and Short-Term Solutions: Potential Interventions/Incentives

As this analysis suggests, the causes of the shortage of primary care physicians in inner cities are many and complex. Some are rooted in the most fundamental characteristics of our systems of medical education and health care financing. Solving the problem thus requires a multi-pronged strategy. It will also require considerable time and patience. The pipeline for training new doctors requires at least a decade before the effects of any change are realized. That's all the more reason to begin the change process sooner rather than later.

On the other hand, systemic change, while necessary in the long haul, will not provide immediate relief. Shorter term, improvisational, and incremental steps are also essential. And both long-term and short-term interventions need to be attempted at all points in the continuum from medical school admissions to reimbursement to operation of practice settings.

Medical School Education/Training

The obvious place to start, for the long haul, is with medical school admission policies. Efforts can be made by medical school admissions committees to favor students who display personal characteristics and values that indicate a preference for primary care. Roughly 50 percent of students who indicate a preference for family practice on the Medical College Admissions Test Questionnaire were still planning a practice in primary care at graduation (6). More women, minorities, and persons from medically underserved areas choose primary care than do men, Caucasians, and persons from relatively privileged backgrounds (8). A close look at the career plans of minority students graduating from New York State medical schools in 1989 revealed that more than two-thirds planned to practice in a large or moderate size city, compared with 57.7 percent of the total graduating class. Almost 45 percent of these same minority students plan to practice in a socio-economically deprived area, compared with only 15.6 percent of all students surveyed (9). Efforts by medical schools to admit more ethnically and socio-economically diverse student bodies will thus almost inevitably produce more graduates willing to undertake the rigors of inner city primary care.

Clearly, medical schools must share these goals in order to recruit these students. In order to encourage their doing so, no mechanism is likely to be as potent as redirection of funding streams. For example, the New York State Health Research Council's Advisory Panel on Primary Physicians has recommended linking existing and new sources of State funding to compliance with criteria for primary care education for all medical students in New York State. Initially, funding to the schools would be tied to developing systems and changing curriculum; ultimately, funding would be directly linked to the proportion of the class entering the primary care fields of family practice, primary care internal medicine, and general pediatrics (8).

The next obvious step is for medical schools to change their curriculum to put more emphasis on primary care. Forty-five percent of the graduating students responding to the 1990 Medical Student Graduation Questionnaire (75 percent of all graduating students) reported that they made their specialty decision during their third year in medical school, compared with 24 percent in year four, and 8.5 percent in years one and two combined (10). Yet many medical schools don't offer clerkships related to primary care until the fourth year. Thirty-eight percent of students responding to the 1990 MSGQ reported that they found the time devoted to the care of ambulatory patients at their medical school was inadequate, as compared to 2.5 percent for the care of inpatients. Additionally 55.5 percent found instruction in preventive medicine and 48.6 percent in community medicine and public health to be inadequate (10). A mandatory ambulatory primary care clerkship was required for only 58.7 percent of graduates and fewer than 20 percent participated in an ambulatory primary care clerkship when it was offered as an elective (10).

In New York City, where five of the eight area medical schools do not have a department or a division of family practice, the only medical specialty entirely devoted to primary care is offered by the Institute for Urban Family Health, an organization with a proven track record in successfully training family practice physicians. The Institute has begun a two-year project, supported by the United Hospital Fund, directed at medical students in their early years of training. Through a combination of outreach efforts to students in New York City medical schools, Institute staff will provide information and hands-on-experience in family practice, as well as exposure to role models and a family practice mentoring system. Over the two-year period, approximately 2,700 students will have at least some contact with the program, while at least 100 students will have the opportunity to meet with a physician mentor and observe a clinical session. It is anticipated that these interventions will increase the pool of primary care residency applications and, ultimately, the pool of inner-city physicians (11).

New York Medical College, whose recently appointed Dean is an internist with a major personal commitment to primary care, has recently initiated a six-year primary care training track, which credits the fourth year of medical school as the first-year internship. This program requires students to commit to a primary care specialty very early on, but ultimately saves one year of residency. A major part of this training program is a mandatory rotation through a community-based primary care clinic.

More generally, training needs to be moved out of the hospital and into the community. As Dr. Jack Colwill noted in his recent article in The New England Journal of Medicine,

> "... many who plan generalist careers in internal medicine and pediatrics decide during residency to subspecialize. The heavy orientation toward inpatients, organization of inpatient wards according to subspecialty, encouragement by faculty members to take up subspecialty fellowships,

> limited experience in primary care, and limited number of generalists to serve as role models all contribute to this shift towards subspecialization. The primary care orientation of residency training must be strengthened and the number of subspecialty fellowships reduced" (6).

Traditionally, graduate medical education has been financed through patient service revenue of teaching hospitals. As Medicare's payment adjustment for the costs of indirect medical education has become more visible politically because of its budgetary and allocative importance, suggestions have arisen that the funds it makes available might be redeployed to encourage the expansion of primary care training in place of subspeciality programs, and to subsidize some of the additional costs associated with primary care education (8).

Perhaps inevitably, this idea has first been incorporated into policy in New York. The New York State Hospital Review and Planning Council (NYSHRPC) approved full implementation this year of a regulation that adjusts the indirect medical education payments to teaching hospitals to give greater weight to primary care and emergency medicine residents (12). Under this State initiative, a primary care resident in an approved internal medicine, pediatrics, or family practice program is weighted at more than one and one-half times more than specialty residents. Among other criteria for upweighting eligibility, 20 percent of residency time must be spent in a continuity of care setting (12).

On an entirely different tack, the fiscal year 1990 Federal budget increased appropriations for the National Health Service Corps, which had all but faded away during the Reagan Administration (13). The Corps, which was initiated in 1971 to provide scholarships to medical students in exchange for practicing in inner-city and rural health professions shortage areas, has offered little to inner-city primary care practices in recent years, as most service obligations were paid back in rural areas. In fact, anecdotal stories of inner-city, primary care residents, prepared to practice in the underserved area in which they trained, being pulled out of the city to a rural town in the midwest, have created a mistrust of the Corps among inner-city programs.

The "new and improved Corps" has shifted its emphasis from strictly a scholarship program, awarded at the outset of medical education with a pipeline of at least six years of education and training, to a loan repayment program, designed to eliminate this long training pipeline and allow primary care physicians to join upon completion of residency training (14). Participants in the program receive annual payments for their school loans, in addition to their salary, for practicing in a designated HPSA. Payments increase from $25,000 a year for the first two years, to $35,000 a year for each additional year, amounting to over $100,000 in debt repayments after four years (13). For fiscal year 1991, the national appropriation for the combined NHSC loan repayment and NHSC scholarship program was $45 million (13). While this increased appropriation is a strong move in the right direction, it cannot be enough to meet the great demand for primary care physicians. It also appears that, since most people apparently think the Corps is "dead," the Public Health Service has had difficulty marketing the new loan repayment program. As a result, in July 1991, only 122 new NHSC loan repayment matches had been made for 1991 (13). Until the word catches on and marketing for the loan repayment program improves, and because the pipeline for the NHSC scholarship program remains at a minimum six years, we may see an actual decline in the number of NHSC physicians as more physicians leave the Corps than enter it (13). However, with significant marketing efforts, this may have less of an impact on inner-city HPSA's, which compared to rural areas, employ only a small portion of the Corps.

A new approach to loan forgiveness, on the State level, was recently undertaken in New York. Residents entering primary care programs at select municipal hospitals will be given $7,500 awards in each of two years, for use in defraying educational loans. The funds for this demonstration project have been made available through a provision in the State's rate-setting legislation, and will be paid through a rate adjustment to these hospitals (15).

The New York State Academy of Family Physicians would argue that a service obligation tied into loan repayment may be unnecessary. It is proposing, through the Family Practice Development Act 1992 Initiative, to create a state loan repayment program that begins during residency training itself (16). Since two-thirds of those who complete primary care training in New York State do in fact enter primary care practices after they complete their training, the benefit of the recruitment enhancement should more than pay for itself even without an explicit service obligation (16).

Loan repayment and forgiveness programs such as these can certainly offer financial incentives to aid in the recruitment process. The bottom line, however, is that primary care incomes must increase, and the gap between those incomes and those of subspecialists must begin to close. The average salary for a primary care physician at one New York City hospital is currently $75,000 which, as low as it is, reflects an increase from recent years. Many other New York City hospitals, in planning for increased primary care services, have expressed a willingness to pay as much as $110,000, perhaps in response to political and social pressures to expand primary care, or in anticipation of potential opportunities from managed care expansion. But it will take some time before revised salary structures are universally adopted, or--perhaps more critically--before awareness of these increased salaries penetrates the awareness of medical students and residents making career choices (17).

The disparity between reimbursement rates for primary care and other subspecialty care has traditionally reflected and contributed to the lack of prestige associated with primary care. Efforts to change this, on a Federal and State level, are just beginning. The Resource Based Relative Value Scale (RBRVS) recently implemented for Medicare physician payment is obviously a critical first step, although its positive impact in New York will be significantly attenuated, if not destroyed, by the simultaneous redistribution of Medicare payments across metropolitan areas, with the net effect that many primary care practitioners in New York City will actually end up with lower Medicare payments under the new system than the old one.

In State policy, New York's Medicaid program is in the process of implementing Products of Ambulatory Care (PAC's), a patient and service-based classification and payment system. PAC's will increase relative payment levels for primary care for those facilities that are designated as "preferred primary care providers," because they meet requirements regarding access and continuity of care (18). Unfortunately, the PAC's payment system will be available only to hospital ambulatory care departments and freestanding diagnostic and treatment centers, not to physicians in private practice.

Developing a private practice, or a small group practice dedicated to primary care, is an extremely difficult endeavor in a poverty stricken inner-city community. Although primary care is probably best delivered in a community-based setting, few incentives exist to foster such development. With reimbursement for primary and preventive care as inadequate as it is, and the population of those communities most in need of services predominantly covered by Medicaid or uninsured, practices are in danger of becoming "Medicaid mills" just to stay afloat. Mechanisms for surmounting this problem are still to be found.

The New York State Advisory Panel on Primary Physicians and the New York Academy of Family Physicians have both developed proposals for practice development assistance programs. Both programs recommend the provision of low-cost capital loans intended to cover the cost of starting a practice and to offset initial operating deficits (8,16). Under the family practice proposal, maximum awards of $200,000 would be made to practices that become State-certified based on specified enhanced primary care criteria. A loan forgiveness incentive is built in for each year the practice remains certified.

We've Built It, They've Come, Now How Do We Make Them Stay?

For many organizations seeking to provide primary care in the inner city, recruiting qualified physicians is not their major problem; keeping them is. Even when physicians are attracted to inner-city primary care, and provided with an adequate financial base, maintenance of at least a minimal quality of professional life is essential to physician retention. Deterrents to remaining in practice cited earlier, from productivity standards to crime and fear of violence, must be minimized where they can be and compensated for where they can't.

The practice model adopted can have a profound effect on the quality of primary care physicians' professional life. Practicing in small groups, whether independent or as sub-organizations of larger provider organizations, with a reasonable limit set on the number of patients, can afford the doctor the opportunity to develop an ongoing relationship with his/her patients, be part of a peer group of other doctors in the practice, and share the responsibility of after-hours coverage with the other members of the group.

Extremely important to the quality of professional life, but essential to the quality of care, is a hospital affiliation. Two generations ago, the majority of general practitioners in many communities had only the most tangential relationships to hospital-based services, but contemporary standards of medical practice, not to mention the training and orientation of contemporary physicians, require hospital privileges. Without them, real continuity of care is impossible. Conversely, active participation in a hospital staff is the best protection against the sort of professional isolation too many community-based primary care practitioners feel. A study performed by North General Hospital in Harlem of the factors that influence practice choices found that "physicians need assurance that they will not be recruited and then left out there to fend for themselves. They want to know that they are part of a larger group effort spearheaded by the hospital..." (19). Hospital ties can also be used to satisfy the need for continuing education, which must be built into any practice arrangement. Grand rounds, journal clubs, and attendance at professional conferences keep the physician abreast of new developments in medicine and therefore benefit the patient as well as the physician.

Retention of primary care physicians is also significantly enhanced by adequate attention to necessary supports within the practice setting. Something as simple as a dedicated receptionist can increase the productivity of the practice, improve the patients' perception of the practice, and allow the physician to spend his/her time practicing medicine. The same can be said for an appointment system, a medical records system, and laboratory information system. Ancillary services should be available and results easily accessible.

In the best of circumstances, nurses and social workers also enhance the quality of medical practice by providing education, advocacy, and other patient and practice support. The level of poverty and disease and their sequelae in inner-city communities requires specialized attention to social needs. Moreover, when the services of such professionals are provided through truly multi-disciplinary teams with active physician participation, not only does the quality of patient care increase, but so does physician satisfaction.

Finally, physicians will not practice for long in settings where they don't feel safe. The expense of a security guard will pay for itself as will--somewhat less ominously--investments in an attractive and functional facility, and such basic (but often rare) amenities as parking.

Two relative success stories in New York City confirm the importance of such efforts for physician retention. The Institute for Urban Family Health, which operates a residency program specifically geared to inner-city primary care, boasts a retention rate of two-thirds of its graduates. A large part of that success is attributable to the program's aggressive recruitment of minority candidates.

But once physicians have completed training, efforts must still be made to assure that they stay. Maxine Golub, Vice President for Program Development of the Institute, believes that packaging is the key to successful retention strategies (11). As a parent organization operating primary care practices, the Institute provides faculty appointments and the opportunity to precept students, as well as hospital admitting privileges, continuing education, adequate support systems, and a comprehensive fringe benefits program. Perhaps more importantly, doctors affiliated with the Institute have a say in how their practices operate. They thus become more invested in the program because they have a continuing role in shaping it.

The Montefiore Medical Center, which operates five inner-city, community-based primary care centers in the Bronx, has also been successful in recruiting and retaining physicians, especially those trained at its own Family Health Center. Dr. Robert Massad, Director of the Montefiore Ambulatory Care Network, attributes their success to a range of factors. The reputation of the medical center, the way it presents itself to potential recruits and to the community, and the availability of attractive practice spaces are useful recruitment tools. Operating systems that provide supports such as medical assistants to schedule referral appointments or secure timely laboratory results improve the quality of professional life. A varied work load, which limits the number of direct patient care sessions to six a week, helps prevent burnout. It also leaves time free for teaching, developing programs, performing research, or participating in quality assurance activities. The only thing wrong with this model is that it is expensive--requiring continuing grant funds to support the "luxury" of freeing up physicians' billable time for other activities (17).

Montefiore has also recently had empirical confirmation of the value of teaching activities to physician recruitment. Two primary care sites that had difficulty recruiting physicians in the past recently began operating as teaching sites for residents in internal medicine and pediatrics. Four of those residents, who will complete their training this summer, have decided to stay on as attendings.

A Word About Midlevels

The physician shortage is immediate, with limited potential for short-term interventions. While the pipeline for training new physicians is six to eight years, the training time for midlevel practitioners is significantly shorter. More to the point, it has now been established beyond reasonable argument that, in appropriate settings and circumstances, nurse practitioners, physician assistants, and nurse-midwives can provide a quality of patient care as high as that provided by physicians in the same circumstances.

The problem with mid-levels, at least in New York City, is they are becoming as difficult, or more difficult, to recruit than physicians. The number of training slots for these professions is limited and traditionally, at least for midwives, their training has been expected to take a back seat to residents. Further, in New York City, mid-levels' salaries, especially for those with substantial experience, are approaching those of entry-level physicians. At least some administrators thus question mid-levels' comparative advantage, given lower levels of productivity and more constrained scopes of practice than physicians. Clearly, on the other hand, there is much to be said for quality care taking a little bit longer, and should incomes of primary care physicians salaries begin to creep up, the relative attractiveness of mid-level practitioners will once again increase.

Conclusions

In the long run, there is good reason to be optimistic about the supply of primary care physicians for currently underserved communities. Sooner or later, health care reform insuring universal access will redress some of the comparative economic disadvantages of low-income communities. The ripple effects of RBRVS and other changes in payment methods will reduce the relative economic attractiveness of additional years of subspecialty training. Demographic change, if nothing else, will increase the proportion of minority students entering medical education. Medical education itself may even begin to change.

But the needs of inner-city residents for primary care can not wait for the long term. For the time being, demand will surely exceed the supply. The margin by which it does so, however, remains susceptible to both policy and programmatic intervention. If we are committed enough, patient enough, and creative enough, we can begin to make a dent.

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How Can Health Profession Training Enhance the Objectives of Improved Access to Care? How Can Successful Models be Broadly Adapted?

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Introduction

It is generally agreed that the United States has 34-37 million people with inadequate access to health care. It is also generally agreed that, if the access problem is to be solved, there must be an increased number of primary care physicians who will practice in currently underserved areas. This is not a new issue. Specialty and geographic maldistribution was a major health manpower issue in the late 1960's, and concern over access to health care was largely responsible for the manpower decade of the 1970's.[1] That decade produced the modern era of primary care and resulted in the establishment of the discipline of family medicine departments in schools of medicine, and also facilitated the emergence of general internal medicine, general pediatrics, and similar emphasis on primary care in other academic disciplines.

One of the major questions confronting medicine at the beginning of the 1990 decade is the question of why the momentum of the 1970's was lost in the 1980's, and why that momentum seems to continue to slow in the 1990's. The reasons for this are undoubtedly many, but among the significant possibilities are the following:

- Economic Factors
    - There has been a dramatic decrease in funding for innovations in primary care education for the ongoing operations of established primary care training programs. The primary care disciplines that sprang up in the 1970's were supported by special project grants, which provided enticing incentives for institutions to mount programs to produce more primary care physicians and to experiment with novel ways of enticing these products to underserved areas.
    - Primary care has never developed a unique or well defined knowledge base for its specialty. As such, a limited research and development enterprise was developed with a correspondingly small attendant grant and contract revenue stream. The result has been that departments and divisions concerned with primary care have never enjoyed the same research base of funding similar to that seen in other academic departments.

  - Large clinical practices in primary care have never developed in academic medical centers, and, where they did occur, the modest reimbursement rates for Medicare, Medicaid, and various insurance plans resulted in only modest streams of revenues to support these fledgling enterprises. Hence, as medical schools increased their dependency on clinical income to fund their academic programs, primary care departments have been left to struggle.

  - Increasing debt has had an adverse impact on students' choices of specialties to pursue. Average debts of $50,000 per graduating senior and an alarming increase in the number of students who owe over $100,000 when they graduate have impacted residency choice. The bright students admitted to medical school have undoubtedly reached the conclusion that, given the uncertainty of physician reimbursement, the "safest" path to follow if one wishes to pay off the loans and have a satisfactory life style is the more technically oriented specialties that have "always paid more."

  - Increased Federal regulations have become time consuming, costly, and frustrating to the primary care physician, especially to those who are practicing alone or in small groups. This, together with a comparatively low reimbursement rate, has made primary careers more frustrating and have decreased the attractiveness of the career. When coupled with student debt, this factor becomes a significant disincentive for primary care.

  - The economic decline in the United States has called into question the rising health care costs, inefficiencies in the health care system, and the physicians' role in both. This, in turn, has resulted in an increased emphasis on managed health care, with a mandatory decrease in professional autonomy. Of all physicians, primary care doctors have jealously guarded their "independence," and this declining autonomy has again decreased the attractiveness of primary care careers.

- Professional Factors

  - The primary care "prophets" of the 1960's and 1970's have aged, and with this aging the zeal of this new discipline has diminished. While the second generation of leaders are bright and well trained, it has not been possible to retain the excitement that surrounded the "revolutionary, new" primary care movement as it existed in the 1970's.

  - Because primary care does not have a unique body of information that it can call its own, it has never been accepted as "equal" among other academic disciplines. The result has been a failure to embed primary care in the cores of established medical schools such that a continued stream of resources is assured. This is one element of the "no respect" aspect for primary care referred to by Dr. Robert G. Petersdorf.[2]

- There has been a preoccupation within the health and education communities with other issues, including the financial survival of medical schools, hospitals, programs, and practicing physicians. This has been driven by concerns over health care costs, health care reform, malpractice, physician reimbursement, professional judgments, and control of patient care decision making.

- There has been a loss of confidence by the profession reflecting the anxiety, hostility, and/or anger that many physicians feel. As a result, many physicians have become reticent to recommend medicine as a career to their children and to other young people, including those who might be interested in primary care careers. This pessimism has been wide spread and reflects a clear uncertainty about the future.

- There has also been a decrease in the emphasis on professionalism beginning in the 1970's and continuing through the early 1990's. This is especially evident in the minimal attention that the doctor/patient relationship has received. Coincidental with waning professionalism has come a decreased emphasis on the service ethic as a motivating force for physicians.

In summary, the lack of a strong financial base for training and practice, the lack of adoption of primary care by other disciplines, an alarming increase in student debt, and a decrease in professionalism have all combined with a concern and preoccupation with economic issues to slow the primary care movement that began with so much promise in the late 1960's and early 1970's. The challenge is how to reinvigorate the system and restore the effectiveness of the efforts made in the golden manpower decade of the 1970's.

Training to Enhance Access to Care

Given our status at the present time, how, then, can training enhance access to primary care? To begin with, in order to provide broad access to primary care, there must be an adequate number of primary physicians trained, and these physicians must be placed in areas of need. To achieve this, a variety of developments must occur.

From the history of primary care training in this country, it is clear that training programs must make a commitment to the concept that primary care training is essential to future health care delivery. Lip service will not do the job--it must be followed by a commitment of resources necessary to sustain this discipline over a protracted period of time. It is essential that training program directors and educators think in terms of 20 to 30 years, and not in three- to five-year goals.

This commitment would include the funds, necessary people, space, creative energies, and the necessary efforts to develop a research base for primary care. Primary care cannot be expected to survive like other disciplines--it requires significant core support since it cannot develop independent sources of revenue. Its limited grant and contract revenue and its limited practice revenues, even in the face of revisions of physician reimbursement through a resource-based relative value scale, will never make it as independent of core support as are the other clinical disciplines.

It is equally apparent that efforts to assure a steady stream of primary care physicians must begin with the recruitment of primary care-oriented students. These are individuals who have rural, inner-city or shortage-area backgrounds. They are generally people, value, and service to others oriented who want general versus specialized knowledge, and who are expecting more modest income levels and life styles.

The guiding principle for training primary care must be "As the twig is bent, so shall the tree be inclined." In other words, the selection pressure for careers in primary care must begin early and continue throughout the professional life of the doctor. Further, the inclination will have to be sustained by continued pressure and encouragement over the primary care physician's entire lifetime.

A longitudinal primary curriculum must be designed that covers the time from the choice of a career in college through the last day of practice. At each step along this career, the primary care physician, be it future physician in training or an established practitioner, requires support and educational programs. It profits no one to train primary care physicians and then, after a period of practice, have them leave primary care for a more established specialty with wider social, geographic, educational and economic options. The primary care curriculum must include the following:

- Proper role models must be showcased for future physicians at every phase of primary care physicians' careers. This is especially critical early in those careers before they enter medical school and throughout medical school before they make their specialty choice. These role models must be happy, productive, aggressive, respected, and capable of high-quality, professional performances. They must also have a stable, satisfying life style. Without seeing such people, the potential primary care physician may become discouraged and could be easily diverted to other specialties. For the established physician, lack of exposure to such people can lead to a sense of professional isolation and burn out--both detrimental to continued primary care practice.

- It will be essential to provide educational experiences that the future physician will need to function in primary care roles. Included will be counseling sessions, care of patients with acute and chronic diseases, serving on hospital and medical committees, and running an office or group practice.

- It will be necessary to provide experiences in a setting similar to those the primary care physician will function in. These include inner cities, rural locations, solo and small group practices, HMOs, large groups, small and large hospitals, and major systems, including the Veteran's Administration system. These experiences will create viable and "real" options in the minds of the trainees that can then be used to make informed career choices.

- It will be necessary to expose trainees to personal and family life styles so that they can cope with the pressures and realities of primary care. For example, rural "burnout," due to professional and family isolation, along with limited educational, social, and cultural opportunities for the family, and limited career opportunities for spouses, becomes a major disincentive for primary care careers, especially in rural settings. Hence, examples of where these issues have been dealt with successfully and where personal and professional life styles have proven to be very satisfactory will serve as strong motivating factors for trainees.

- It will be necessary to demonstrate the roles that FAX machines, Federal Express, communication technologies, and travel can play in widened career options for spouses, as well as for educational and cultural experiences of the family.

- It will be necessary to provide instruction on the various aspects of personal and professional isolation and how to avoid it. These are serious hazards for primary care physicians. Training institutions must acknowledge this and establish programs to minimize the impact of these factors.

It will also be necessary to introduce the learners to the health care issues of the day and the impact these will have upon their professional and personal lives. Included among these issues are health care reform and change, the changes in physician reimbursement, factors affecting malpractice and liability, the role of managed care and its impact on physicians, and hospital/physician relationships.

Throughout the curriculum, it will be necessary to emphasize the concepts of disease prevention, health promotion, ethics and duties of professionalism, and the multiple leadership roles expected of primary care physicians. The latter include not only health care but also involvement in service organizations, churches, schools, and community health problems. Doctors must take a lead in public health issues plaguing communities, including drug abuse, accidents, alcohol and tobacco abuse, violence, pollution, AIDS, sexually transmitted diseases, and environmental issues. The curriculum also must include skills on how to maintain clinical competence in the face of an exploding biomedical science base.

The content of the curriculum needs to be general and germane to the level of educational needs and reality of the learner at all points in the curriculum. It will, therefore, differ depending upon whether the learner is in a school of medicine, a teaching hospital, or in practice for 20 years. Specifically, in the pre-professional portion of the primary care physicians' life, an introduction to medicine should be provided that includes exposure to real, live primary care physicians who are enthusiastic about what they do. This could be done through the medium of a videotape or by having practicing physicians talk to college students. Independent study modules could also explain what medicine is, the ethics that underlie the profession, expectations and joys of being a physician, and the range of career options available in medicine. It is in the latter area that the "Marcus Welby" image can begin to emerge. First impressions are often the most lasting and, hence, this step is imperative. Such modules could be put in the hands of pre-professional advisers for use in entertaining questions and helping young people to make career decisions.

During medical school, a required weekly externship could be offered in the first year, and an elective to primary care experience could be established in year two. A basic clerkship in primary care should be required in the third year, with a mixture of time in a community setting and in the teaching hospital. An advanced clerkship should be offered in the fourth year, with options for experiences in differing community settings so as to orient the student to the wide range of practices, life styles, and experiences that primary care offers. At the residency level, primary care residencies need to be developed with a mix of teaching hospital experience and community-based education. The community experience should include an immersion in the full life of an active primary care practice, including office-based experience and hospital experiences. It should also include practical aspects of operating a practice.

Finally, the curriculum for practicing physicians should be directed toward maintaining the knowledge, skills, and behaviors that are necessary to provide health care to the populations served by primary care physicians.[3] It also should include an increase in awareness of the ethical issues facing medicine and the value of health promotion, and it should improve the ability of the primary care physician to reason through the ethical issues they are facing. It also should emphasize professional and public issues, including the epidemics that are facing society, along with practical suggestions on how to improve on one's practice, including avoiding professional isolation and malpractice suits.

In addition to developing a longitudinal curriculum, the teaching institution should be able to develop research programs on those issues impacting primary care. Included could be investigation into suggested reimbursement proposals and their impact on primary care. Outcome studies in underserved areas would be useful. Cost-effective plans for health care delivery by primary care providers, liability hazards for primary care providers and how to reduce these, the effects of immunization and prevention programs on health status, factors involved in choosing primary care careers and the reasons doctors leave primary care, the impact of health promotion and decrease prevention on health care costs, the education of physicians concerning the new dialogues, and innovative approaches at the community level to solve various epidemics confronting the community are all fertile fields for research in primary care. An immense amount of new information could result from such studies that would be very useful in improving not only access but also quality of care in rural areas by such studies. At the same time, such activities and intellectual ferment would serve as an attractive recruiting device for medical students.

In summary, the proper philosophical commitment and the necessary resources for primary care training, the proper educational experiences in real life settings, taught by the appropriate role models and the development of a research base for primary care are activities that teaching institutions must undertake if primary care training is to produce the number of practitioners this country requires by the 21st century.

Ways to Have Successful Models Adopted

Clearly, the problems confronting specialty and geographic maldistribution will not be solved unless those models of training that are successful are copied by other institutions. Again, experience from the manpower decade of the 1970's teaches us that this is a very difficult task to achieve. There are many elements that influence the adoption of "someone else's model," among which is the evaluation and endorsement of the program by a distinguished panel of educators and physicians. This brings instantaneous credibility to the model and enhances the likelihood of adoption. Such an evaluation should include the goals of the programs, its structure and function, its cost and its effectiveness.

The second and most important essential for the adoption of a successful model is money. Without the financial resources required to try something new, it will never be achieved. A small financial incentive could result in massive change. This incentive must be available for a defined period of time (e.g., five years) following which these "start up" funds should be gradually reduced and permanent funding must take its place.

In the past, special project grants were very successful in creating the primary care movement (1970's and 1980's). They could be equally successful again. An alternative is to mandate the development of a given program as a condition for receiving non-educational and/or non-primary educational funds. While on the surface this may result in program development, it is always resented. Hence, when the pressure is relieved, the commitment and enthusiasm lag and the program withers.

It will also be necessary for the successful program to develop "the case" for its primary care training program. This must include the need for the program and a description of the program, including its goals, structures, outcomes, commitments, and resources that will be required. The resources should include finances for personnel and space. This case must include the steps to implementation and an outline of an evaluation plan over the short and long terms. Outcome evaluation helps assure continued funding and acceptance of the program.

It would also be desirable to put the financial resources for the educational program in the hands of the person responsible for the educational program. The individual or administrative official could then "purchase" education from the best providers and have sufficient clout to maintain the attention of those providers over time. When those funds are directed by a related but not responsible individual or administrative unit, attention tends to lag and it is questionable whether the funds are ever completely directed to the educational effort. More specifically, the direct and indirect costs of graduate medical education should be put in the hands of the primary care training program director of the medical school or the Director of Medical Education in a non-school of medicine-affiliated hospital. The director should then negotiate with hospitals and community organizations for the training they need. This control in the hands of the educator would have a profound and lasting impact upon future directions of primary care training. It is also the only possible way "start up" funds for community-based programs can be assured. Without financial control, primary care training will either not occur or it will not be sustained. This is a painful lesson that has been made clear by the 1970's experience.

In addition to the financial incentives for training, it will be necessary to provide financial incentives for physicians to settle in areas of need and thereby expand access to primary care. This should take the form of a special reimbursement schedule for physicians practicing in these areas. For example, a 10-20 percent average payment by government and third-party providers would be a powerful incentive to practice in these areas of need, especially to physicians beginning their practice and who have a large debt. It could also be incentive to develop managed care proposals for rural areas by groups of physicians.

If a premium payment for primary care in rural areas is not developed, then an alternative method by which medical student debt can be repaid or forgiven for service in an underserved area must be developed. This is critically important! Without it, the opportunity for redressing specialty maldistribution will be lost. Very bright students are admitted to medical school, and it is not at all surprising that, when they learn of the financial reality of being a primary care physician versus what other specialties earn, and, if they have a large debt, they will conclude that it is safest to err on the side of technical career choices in order to maximize the likelihood of significant future income. This is probably one of the most important disincentives for a choice of primary care careers and increasing access to care that exists.

It also may be desirable to incorporate a requirement of primary care experiences in all accreditation activities. This would include undergraduate medical education and graduate medical education. Since non-primary care specialists provide a significant amount of primary care, they must also have adequate training for this role. Therefore, entrance to specialty training immediately after graduation from medical school, versus a rotating internship experience of longer than one year, may have to be reexamined.

It will be necessary to increase the prestige, recognition, and incentives for primary care. This would begin with the controlling of educational funds required for these programs. It can be further enhanced by establishing national, State, and local awards that are given on a competitive basis and which, over time, will evolve to a level of considerable prestige. This can be done also by enhancing the public's appreciation of horizontal versus vertical specialization and the challenges that both of these pose.

It will also be necessary to free the undergraduate medical education curriculum from the domination and/or control of specialty-oriented faculty members and their departments if new models are to be developed. Curriculum committees as now constituted are often heavily controlled by non-primary care faculty. As such, directly or indirectly the curricular experiences and the resources to provide these are controlled by the non-primary care departments and specialties. The failure to do this will result in empty words when it comes to adopting a "successful model" that requires doing things differently in "our school." This is another lesson we learned in the 1970's.

It will be necessary to communicate, recruit, and reinforce on a continual basis. This should include the importance and necessity of primary care for expanded access and for cost-effective delivery of health services. Failure to do this will prolong the adolescent status of the primary care movement and, in 25-30 years, there will be another secretarial conference discussing the need for primary care physicians to enhance access to health care. A continuing crusade is necessary if adoption of models is to occur with any frequency.

Summary & Conclusion

When the public spotlight is off primary care, when politicians, educators and government officials no longer give speeches on primary care, and when public pressure for access has diminished, primary care programs must continue. There must be a steady flow of young physicians in primary care on an ongoing basis. The challenge is to build an infrastructure, including the resources, people, policies, public relations, and, most importantly, the attitude necessary for this vital part of medicine to continue. Failure to do this in the private sector could lead to government mandated programs with the rigidity and lack of responsiveness that characterizes government activities in other spheres of life.

Let us learn from the lessons of the manpower decade of the 1970's and develop programs to meet the problems that developed in that era. Let us recognize that a long-term commitment to primary care is necessary if an increased number of primary care physicians to practice in underserved areas is desired. Let us also recognize that this commitment means, in essence, a commitment to educational support programs across the life span of the primary care physician, beginning in college and ending with retirement from practice. A major policy, procedure, and structural change will be required, and control of the funds for education will become essential if the goal is to be achieved. This, coupled with financial incentives to practice in underserved areas of primary care in the form of additional reimbursement and debt repayment, would enhance the attractiveness of primary care careers very significantly.

Finally, those in primary care must assist in the development, pride, and confidence that are essential for this discipline to survive and to thrive.

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Medicaid: Avenue to Access or Barrier to Care? Opportunities for Collaboration with Public Health

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I am from Medicaid. My mission today is to offer some insights into the Medicaid mind set, with the hope that a better understanding of Medicaid and the people who administer it will help us both--Medicaid and Public Health alike--to accomplish our mutual goals.

Fact is, I don't believe Medicaid or Public Health can be as effective as either can and should be without the cooperation of the other. Unfortunately, too often where that cooperation should be, has been rivalry, resentment, or even open warfare.

Here are three facts that illustrate why I believe every Medicaid agency should want to work with its Public Health colleagues:

FACT 1. Medicaid is a major payor for OB services. In some States Medicaid is the major payor.

Medicaid now pays for more prenatal care and more deliveries than ever before. In some States, Medicaid pays for half of all deliveries. In Michigan last year, there were 153,000 live births. Medicaid paid for the delivery and most or all prenatal care for over 62,000 of them. That is over 41 percent, up from 25 percent just five years ago, and on a trend toward 50 percent in the next few years.

Obviously, the Federal eligibility mandates are having an impact. Just as obviously, Medicaid programs have never before had a bigger financial stake in better pregnancy outcomes.

FACT 2. Medicaid is a major payor for neonatal services.

Medicaid now pays for more neonatal intensive care than ever before. Last year in Michigan alone, Medicaid paid for neonatal intensive care for 5,000 babies, at a cost of over $90 million.

Even for a Medicaid program, $90 million is a very large amount--an amount large enough to cause the most callous, green-eye-shaded Medicaid fiscal-type to wonder if there might not be some way to improve Medicaid funded pregnancy outcomes and avoid or reduce these costs in the future.

FACT 3. Medicaid eligibility is now associated with most infant mortality.

Five years ago, Medicaid and Public Health in Michigan did a data match of infant deaths and Medicaid eligibility. At that time, prior to the "delinking" of Medicaid from welfare and any of the eligibility expansions for pregnant women and infants, Medicaid paid for 25 percent of the births, but accounted for 46 percent of the infant deaths. The infant mortality rate for Medicaid eligibles was over 20; for non-Medicaid, about 8.

Now that Medicaid eligibles account for over 41 percent of births in Michigan, my personal estimate is that Medicaid eligibility is now associated with seven out of 10 infant deaths in Michigan. That is a startling fact. What it says to me is that clearly any credible strategy to reduce infant mortality must specifically target the Medicaid eligible population if such strategy is to have any chance of success.

For decades, the goals of reducing infant mortality and improving child health and pregnancy outcomes have been regarded as the exclusive province of Public Health and clearly not of Medicaid. Fact is, Medicaid now has a material interest (to use a financial term) in the achievement of progress on these goals, and, in many ways, Medicaid is better positioned to help than at any time in the past.

Specifically, what Medicaid does best is to provide financial access to medical services.

It has become fashionable to doubt the access to care promised by Medicaid. Questions phrased something like "Access to what?" often precede conventional wisdom that Medicaid eligibles cannot find a physician who will serve them.

Let me say that we in Medicaid do not have our heads in the sand. We are very much aware of the individual pregnant woman who can't locate a doctor for prenatal care or delivery, or the mom who can't find a pediatrician for her child. And, we hear the stories relayed by local health departments of communities with severe access problems, especially for those with Medicaid coverage.

But, we in Medicaid are also aware of what the program does in fact provide access to. The data show that Michigan Medicaid patients now see doctors at almost exactly the same rate (i.e., 5.1 visits/year) as other insured populations (e.g., 5.2 per year for Michigan Blue Cross and 5.1 per year for Michigan State employees and retirees). And, that rate has hardly changed over the last decade as Medicaid fees have declined dramatically relative to market rates.

Fact is, Medicaid does provide access: five million physician visits per year for almost one million people clearly represents something close to mainstream access, at least for most eligibles.

It is important to recognize that, in the past few years, Medicaid has changed in ways that better enable the program to provide access to health care to even more persons:

1. **Eligibility.** Under current Federal law every Medicaid Program in America now covers pregnant women and infants up to their first birthday, in households with incomes at or below 133 percent of the Federal poverty line. Some two dozen States have opted to extend coverage up to 185 percent.

All kids up to age six in America are eligible for Medicaid if their family income is below 133 percent of the Federal poverty line and kids older than age six are being phased in at 100 percent of the poverty line, a year at a time, each October 1. This coming October will add kids up to age nine. All kids up to age 19 will be eligible for Medicaid at or below the poverty level, in the year 2003, under current Federal law.

Have these eligibility changes made a difference? Yes, in a big way. Let me illustrate with this anecdote. A few years ago, when presented with the opportunity to take advantage of what was then an optional Medicaid eligibility expansion, the Michigan Department of Public Health offered to fund the first year of the expansion by taking some of the State funds previously used by the health department for its own prenatal/postnatal care program. The Medicaid expansion was believed by all parties at the time to be a $12 million per year issue. We just re-examined our expenditures for this program. It is now a $100 million per year program.

2. **Coverages.** Medicaid coverages are limited to and based on medical necessity. But within that constraint, the program can offer a fair amount of flexibility in defining what is covered. As one example, Michigan Medicaid and Public Health designed cooperatively a benefit known as Maternal Support Services. It covers "non-medical" primary care services such as nutritional counseling, psychosocial counseling services, prenatal education and transportation and scheduling assistance for Medicaid eligibles determined to meet certain risk criteria. By all accounts this is regarded as a valuable cost-effective program with a positive impact on pregnancy outcomes. We are currently working in the legislature toward extending its coverage for infants for the first year of life.

The EPSDT component of Medicaid has come to offer a significant opportunity for expanded coverage for children with Medicaid eligibility . Perhaps there is more creativity in this than in any other Medicaid arena at the present time. Certainly, there is a significant interest in it.

3. **Payment Levels.** It is unclear what the relationship is between what Medicaid pays and the availability of physician services. Still there is hope that improved payment levels will lead to improved access.

Many Medicaid programs have responded to the OBRA 89 requirement by increasing fees, in some cases substantially.

In Michigan, we just implemented the largest single fee increase in the history of our program--15 percent overall at an annual cost of $66 million--at the same time we adopted the Resource Based Relative Value Scale for physician payments.

But because the RBRVS puts priority on primary care services, fees for the evaluation and management group of procedures increased by 21 percent. And, we specifically increased the fee for prenatal and delivery by 29 percent. These decisions were made explicitly in consideration of the fact that the reimbursement system itself is one of the most powerful policy tools available to encourage the provision of primary, prenatal, and preventive care.

But the increases in eligibility, coverage, and payment rates have come at a tremendous cost. Medicaid expenditure increases have been singled out for special scrutiny at the national level and in virtually every State.

Medicaid has come under conflicting pressures with respect to its cost. On the one hand, State budget directors are seeking every available avenue to constrain the costs of the "Pac-Man" of the States' budgets. On the other hand, those in other departments such as Public Health, Mental Health and Education are knocking at the Medicaid door seeking to increase their share of the Medicaid pie.

Let me say just a few things about Medicaid as the "Deep Pocket." Medicaid can in fact support ongoing and new initiatives. In some cases, the availability of Federal Title XIX funds can allow significant initiatives to be done or expanded. And, Medicaid officials have often shown a willingness to participate or even take the lead in facilitating their success.

However, Medicaid staff become impatient when other agencies come to the Medicaid doorstep, or by-pass us altogether and go directly to the Governor or legislature, with a proposal that shows an incomplete

> recognition of what Medicaid is, or an incomplete recognition that Medicaid must take seriously accountability and fiscal integrity, or that Medicaid must operate within certain rules and constraints. After all, when things go wrong, it is the Medicaid agency that must take the heat.
>
> Usually, we have found that things can be worked out to satisfy Medicaid fiscal and accountability concerns while at the same time allowing another program agency to benefit from Medicaid funding--if all parties are willing to respect the validity of each other's positions and work through the issues.

Right now opportunities abound for collaboration. We in Michigan can point to numerous examples of how working together has resulted in an improved delivery of primary care for children and pregnant women:

- Development of a simplified application form for eligibility (**before** the Federal law mandated it).

- Use of local health departments as sites for taking eligibility applications and collecting initial documentation.

- Delivery of Maternal Support Services.

- Joint implementation of a vaccine replacement program to maximize child immunizations.

- Acquisition of Medicaid matching funds for maternal outreach workers including nutrition aides within cooperative extension service.

- Medicaid funding for "Baby Your Baby" public awareness campaign.

- Coordinated policy development and maximized Federal match for high health needs children served by the State's Crippled Children's Program and for children with Medicaid coverage not enrolled in the Crippled Children's Program.

- Assistance of local health departments and the State health department in Medicaid managed care objectives by working with local providers to improve service delivery arrangements.

- Assistance of local health departments and the State health department in recruiting OB and pediatric physician services for the Medicaid eligible population, and the organization of non-profit clinics to serve these populations where there is a shortage of providers.

There are still opportunities out there. We currently are working together on an interagency task force relating to a number of child health and EPSDT issues. We are together talking to the legislature about extending maternal support services to infants up to one year of age. There is a whole world of evaluation opportunities where we share common interests and reliance on each other's resources. I am particularly interested in these evaluation opportunities. Perhaps together we can examine the impact and effectiveness of recent program changes. It would be good to know, for example, whether expanded Medicaid eligibility has an impact on infant mortality? Or if special prenatal care programs improve pregnancy outcomes? In any case, the benefits of collaboration and cooperation are substantial.

It is really true; neither Public Health or Medicaid can be as effective as either can be and should be without cooperation and collaboration with the other. And the real beneficiaries of this cooperation and collaboration are the people served more effectively by our programs; and the taxpayers who get better value for their tax dollars.

How Can Research Improve Our Understanding of the Content and Organization of Primary Care?

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To most people, primary care is the antithesis of a hard science. Its worth is measured more in terms of its "motherhood and apple pie" features than in numbers and ratios. The common wisdom is that primary care is humanism, prevention, an open door, and inexpensive. The most recent additions to descriptions of primary care include gatekeeper and case manager.

This paper takes the view that primary care is a quantifiable entity that can be measured. Quantification makes it possible to develop goals for primary care and to assess progress towards those goals. It makes it possible to compare one system with another. It also makes possible an accountability and a basis for rational choices where there are personal or policy decisions to be made.

The keys to research in primary care lie in the development of a definition that lends itself to measurement, a strategy that builds a capacity for measurement, and a system of incentives that encourages measurement for research, for management, and for policy and planning.

Definition of Primary Care

This paper provides several examples of the applications of these principles to the assessment of primary care. The first group of applications views primary care from a population perspective; the second group views it from a practice perspective. Both levels of application start from the same definition of primary care. This definition grew out of a series of deliberations around mid-century, after the realization that the perceived physician shortage was a problem of maldistribution by specialty and by geography rather than inadequate numbers of physicians. According to these deliberations, primary care is that branch of medicine that provides first contact care, care that is longitudinal over time and focused on people rather than on any particular problems or types of problems, care that is comprehensive, and care that coordinates and integrates. Sometimes, the concepts of family centered and community oriented are added.

Measurement of Primary Care

An early approach to research on the characteristics of primary care was suggested by a committee of the Institute of Medicine. This committee provided a set of 21 questions addressing five characteristics that are related to the four main features of primary care. Answers to these questions would provide a good basis for judging whether a facility was designed to provide primary care. By themselves, the questions do not address the extent to which primary care is actually provided.

In order to provide primary care, a system, or a facility, must have certain organizational attributes that have the potential for delivering primary care, and it must also demonstrate that it delivers care that meets predetermined standards.

Thus, for each of the four features of primary care, there is an organizational attribute and a behavioral component that are especially relevant to primary care. For the first contact aspect of primary care, there must be access to services and those who perceive a need for services must first contact the system through the primary care facility.

For the longitudinal component of primary care, there must first be a relationship between a service and its population; this is generally achieved by means of some contract, which may be informal or formal as in the case of actual enrollment for a defined period of time. The operational aspect of longitudinality is the use of that service for all problems, regardless of their nature or their body system, for the defined period of time.

For the component that concerns comprehensiveness, there must be a broad range of services that are available, and the appropriate service must be applied when it is needed. In common parlance, benefit packages describe the range of services that are available. The provision of needed preventive services, and of mental health services, are examples of the behavioral manifestation of comprehensiveness.

The fourth characteristic, coordination, also has a structural and a process component. Since information transfer is basic to coordination, the key organizational characteristic of coordination is some mechanism of continuity. Most often this takes the form of continuity of practitioner but, increasingly, teams of practitioners, enhanced medical records and even patient held medical records; "smart cards," or computerized medical records are supplementing the traditional role of the practitioner. The behavior that is coordination occurs when the primary care practitioner recognizes the information about the patient that is generated by other practitioners, or in other parts of the health system.

Examples of Measurement of Primary Care

1. A Cross-National Assessment of Primary Care

The first example of the application of this quantitative approach to assessing primary care is a cross-national comparison of primary care in 10 western industrialized nations. Three aspects of the health system were examined: a primary care score, a satisfaction/expense index (which is available for seven countries), and a summary of 12 major health indicators. First consider the primary care score. This score has two parts. The first concerns the four characteristics of primary care practice, as they have been defined and characterized above. In addition, the score includes the two additional characteristics of family centeredness and community orientation. Each country was assigned a score for each of these six primary care practice measures. The scores ranged from zero to two, with zero signifying a level of achievement not conducive to primary care, and two signifying a level of achievement most conducive to primary care. Scores of one were assigned where there were intermediate levels of achievement.

First Contact

Scores of two for first contact were achieved by Australia, Denmark, Finland, Netherlands, and the United Kingdom, all of which require a referral from a primary care physician for the patient to be seen by a specialist. (Some forms of organization in the United States also impose such a "gatekeeper," but a minority of the population are affiliated with such organizations.) Intermediate scores were assigned to Canada and Sweden, because their systems provide disincentives for specialists to see patients without a referral from primary care. Zero scores for first contact were assigned to Belgium, West Germany, and the United States--countries in which the most common form of care allows patients to seek care directly from specialists.

Longitudinality

Longitudinality, as manifested by identification with a regular source of care and use of that source, except for referrals, regardless of the particular problem of type of problem, also ranged from zero to two. High scores were assigned to Denmark, Netherlands, and the United Kingdom. In these three countries, each individual in the population formally registers with a single physician and consults that physician for all types of care, except for care made after a referral to another physician. Intermediate scores were assigned to Australia, Canada, Sweden, and Finland (because identification with a regular source of care is informal and for the population as a whole, is variable). Belgium, West Germany, and the United States again were lowest.

Comprehensiveness

Comprehensiveness was rated as high only in Canada which received a score of two, because its system covers all inpatient and outpatient care including preventive care and care of psychosocial problems, and outpatient drug; eye and dental coverage depends on the provincial plan. Coverage in Sweden was considered almost as good as that in Canada but not optimal in preventive care for adults. All of the other countries received intermediate scores largely because of poor preventive services for adults and limitations in various services in practice settings. Comprehensiveness was rated as low in Belgium, West Germany, and the United States, largely due to the unevenness in coverage, especially for preventive care.

Coordination

Coordination was considered good only in the Netherlands. Only in this country are specialists required to send letters to general practitioners after seeing referred patients. Finland, Sweden, and the United Kingdom received intermediate scores because coordination is good for some services (such as with long-term care, but poor in other regards, such as between inpatient and outpatient services). Coordination was considered poor in five of the countries (Australia, Belgium, Canada, Denmark, Germany, and the United States).

Primary Care Score. Using the characteristics of primary care practice (first contact, longitudinality, comprehensiveness, coordination), Netherlands ranks highest with high scores on three of the four characteristics and an average score of 1.75. The United Kingdom is high on two of the four with an average score of 1.5; Denmark, Finland, and Sweden have average scores between one and one and a half. Australia and Canada are in the third tier and Belgium, Germany, and the United States in the fourth, with no characteristics achieving a score over zero.

The Netherlands and the United Kingdom emerge as the countries with the most highly developed primary care practice characteristics. Clearly the weakest of the countries are the United States and Germany, which rank relatively low on most indicators.

When family orientation and community orientation are also taken into consideration, the comparisons change only slightly. Several countries rate high on family focus because all members of the family seek care from the same practitioner. In Germany this is not usually the case even though most primary care physicians are general practitioners. Only in the United States are there separate primary care physicians for adults and children in geographic areas where family physicians are in the minority; as a result the assignment of an intermediate score for family focus in the United States may be too generous.

Community orientation is generally underdeveloped in western industrialized nations. Exceptions to the rule are Finland and Sweden, both of which make special effort to target services to community needs.

When these practice characteristics are combined with system characteristics that enhance the likelihood of primary care, the primary care orientation of each country is evident. These system characteristics include the type of practitioners trained to provide primary care, the extent of governmental commitment to providing primary care facilities and to regulating their location so that all areas of the country are covered, the uniformity of health insurance coverage for primary care services, the mechanisms of access to specialists, the percentage of physicians who are not specialists, and the earnings of primary care physicians relative to those of specialists. The systems that are most primary care oriented are the Netherlands and the United

Kingdom followed closely by Denmark and Finland. Australia, Canada, and Sweden are not far behind, but Belgium, Germany, and the United States rank well below any of the other seven countries.

Satisfaction, Health Indicators, and Primary Care. Is there evidence that these characteristics of primary care influence health or satisfaction of populations? The findings of the study indicate that this is generally the case. A ranking of the countries according to the costs of the health system and the population's view of its health system are similar to the rankings regarding primary care. Table 1 shows that the United Kingdom, Australia, and Netherlands rank low on total costs, whereas the United States is far more expensive than the other countries. The population's view of its health system is far more satisfactory in Canada and the Netherlands than it is in Germany and especially in the United States, as shown by a much greater percent of people who think their system needs only minor changes relative to those who say it should be completely rebuilt.

Available health indicators include the percentage of births that are low birth weight; neonatal, postneonatal and total infant mortality; life expectancy at ages 1, 20, and 65 for males and females separately, the number of years of potential life lost, and the age-adjusted death rate. All of these indicators are influenced, at least in part, by access to primary care or access to specialists by referral from primary care.

In general, the higher the primary care orientation of the system, the more the number of health indicators in the top third of the distribution for the seven countries and the higher the satisfaction/expense index for the country. That is, a primary care orientation seems to be associated with better general health statistics, higher satisfaction of the population with its health system, and lower costs. Germany and the United States rank low on all three, with the United States clearly in the worst position of all.

Neither population heterogeneity nor political system can explain the poor performance of the United States. Most of the countries have substantial disadvantaged minority populations and many of the countries have political subdivisions with considerable autonomy of decision making. The diversity of health indicators, and the poor performance of the United States on all but one of them, indicates that violence and other risky behaviors do not account for the generally poor performance of the United States on the health indicators; the diversity of measures of health and the uniformly low ranking suggests that there is more to the low position of the United States than health-jeopardizing behavior in subgroups of the population.

The high cost of care in the United States has not bought a good primary care system or good performance on these major indicators of health, at least as compared with economically similar nations that spend considerably less on their health system and medical treatments. The United States spends more on its health system overall than

TABLE 1

Health Care Spending Per Capita
10 Western Industrialized Nations, mid 1980s

United Kingdom	$ 758
Australia	939
Netherlands	1,041
Germany (FRG)	1,093
Sweden	1,233
Canada	1,483
United States	2,051

Ratio: Percent who say system needs only minor changes divided by percent who say system should be rebuilt.

Canada	11.2
Netherlands	9.4
Sweden	5.3
Germany	3.2
Australia	2.0
United Kingdom	1.6
United States	.3

any other nation and more than most nations on specific components of care. Table 2 shows the amount per capita spent on medication in the outpatient setting alone in equivalent monetary units.

In general, countries organized to provide primary care--those countries with the highest primary care scores--use the least amount of medication and achieve the best results, at least with respect to the major health indicators.

2. An Assessment of Primary Care in an Urban Area

A second example of a population-focused assessment of primary care involves a study done in a large metropolitan area in the United States (Weiner & Starfield, 1983). It was directed at examining the extent of primary care physician resources available to the population in this geographic area. All office-based physician practices were surveyed and a stratified random sample kept log diaries of the care provided to all patients seen in one week. Information was obtained for characteristics that related to the four important features of primary care. An approximation of first contact care was achieved by assessing the accessibility of each practice with regard to the availability of appointments, the willingness of the practitioner to make house calls, the use of an answering service, and formal arrangements for off-hours coverage.

An approximation of longitudinality was achieved by assessing the average duration of patients' relationships with the particular physicians, controlled for age of the patient. Comprehensiveness was approximated by determining the performance of a range of services including physical examinations, immunizations, pelvic examinations, electrocardiograms, tests for iron deficiency, and analyses using a microscope.

Family-centeredness was based on the proportion of patients in the practice who had at least one other family member seen by the same physician.

An additional measure of primary care was created by determining the proportion of visits that were first contact visits, visits for consultation only, visits for ongoing non-referral specialized services, and principal care visits. Principal care visits are those that are not first contact or only for a consultation, or for ongoing specialized services. In addition they are visits by patients who consulted the same doctor the last time they had a checkup and the last time they made a visit for a cold or the flu. These four types of visits accounted for about 97 percent of all visits.

Office-based visit rates were calculated by age, sex, race, and residency of patients in different areas of the city. The study found that the city had an adequate level of use of services overall (as compared with national averages) but a much lower level of primary care visits. The study also showed that internists and pediatricians, and especially family physicians, provided services more consistent with primary care characteristics than did medical, surgical, or psychiatric specialists.

TABLE 2

SPENDING, PER CAPITA, ON OUTPATIENT MEDICATIONS 1988

		Rank
Belgium	148	5
Canada	183	7
Denmark	83	1
Germany	198	8
Netherlands	98	3
Sweden	90	2
United Kingdom	116	4
United States	170	6

The methods used in this study could serve as a basis for comparison of the degree of primary care offered in other regions or cities. When combined with age and sex-adjusted measures of health status, it also provides a basis for assessing the extent of relationship between health levels and primary care, and for identifying gaps in services that are related to inadequacy of primary care services.

This paper now shifts focus from research with a population perspective to research from a practice perspective.

3. An Assessment of Primary Care Provided by Health Facilities

Any practice or health center may assess the adequacy of its primary care services by applying measures of first contact, longitudinality, comprehensiveness, and coordination. One study of an internal medicine teaching practice found that the practitioners did an adequate job of recognizing information about patients generated in a previous visits but did poorly in recognizing information from visits that patients made elsewhere, falling short of standards for coordination. It also found that comprehensiveness, as measured by the adequacy of recognition of the need for indicated preventive procedures, fell below pre-set standards. Of the 26 indicated procedures, only three were present in at least 75 percent of patient records and 15 had major deficiencies as reflected by its presence in fewer than 50 percent of patient records. An educational effort was set in place to remedy these defects; a subsequent evaluation found substantial improvements over time (Kern et al., 1990).

The attainment of primary care was also evaluated in a pediatric clinic in a tertiary hospital. It assessed the extent to which the clinic served as an ongoing source of care, rather than a place for just ad hoc care or referral care, and compared the information with that obtained in office-based practice in the community surrounding the hospital. The clinic directors were gratified to learn that the same levels of primary care were attained in their facility as in the community practices.

Remaining Challenges to Research in Primary Care

There are several remaining challenges for practice-based studies of primary care. The first explores the impact of primary care on a greater variety of types of outcomes and determines which specific components of primary care are most important in achieving effective care. Past research shows that access to a source of primary care is associated with reduced mortality and morbidity (Starfield, 1985; Fihn et al., 1988; Lurie et al., 1986). Use of generalist services before patients are permitted to seek specialist services is associated with fewer hospitalizations (Moore, 1979) and with more appropriate surgical procedures (Roos, 1979). Requiring a visit to a "gatekeeper" before a visit can be made elsewhere reduces expensive specialist visits (Starfield, 1983; Martin, 1989) as well as emergency room visits (Hurley, 1989).

Having a regular source of care over time facilitates the receipt of needed preventive care (Alpert, 1976); improves the keeping of follow-up appointments (Spivak et al., 1980); reduces hospitalizations (Wasson et al., 1984; Flint, 1987); enhances the care for a variety of types of illnesses (German et al., 1976; Salkever et al., 1976); improves compliance with recommendations (Charney et al., 1967); enhances recognition of patients' problems (Steinwachs et al., 1978) including psychosocial problems (Becker et al., 1974); and enhances return of patients from specialists' care (Lawrence and Dorsey, 1976).

There is also evidence that the regular source of care improves the outcomes of care, as measured by a lower rates of preventable illness (Gordis et al., 1973) and better birth outcomes (Starfield, 1985). Costs are also lower for individuals with a regular source of care (Butler et al., 1985).

In most other industrialized nations, the value of primary care does not have to be demonstrated; primary care is national policy. Cross-national comparisons of health and consumer satisfaction with the health system, such as the one described earlier in this paper, suggest the wisdom of such an approach. In the United States, there are impediments to effective primary care because people have no disincentive to seeking care directly from specialists if they can afford it or if their insurance pays for it. Competitive forces rather than need determine the scope of the benefit package. Coordination of care suffers the most from a market place mentality because there is no one accountable for the services rendered. These factors also have impeded the design of a concerted research strategy to evaluate the merits of primary care as compared with fragmented or specialty-oriented care, even though research is all the more imperative in order to provide the basis for informed policy and practice change. Although we can guess at the sacrifices we make in our costly attempt to avoid accountability, we do not yet know the full extent we could gain by reorienting our system towards primary care, with appropriate specialist backup.

Methods of assessing the important elements of primary care are available (Starfield, 1992). Many can be applied in population-based studies, whereas others are more appropriate to practice-based studies. Some may be applied on either level. A host of important research questions challenge the research community and await recognition by research-supporting agencies. What types of organizational arrangements are most conducive to primary care? What are the relative merits of the patient's association with a particular physician, as compared to a particular place as the regular source of care? To what extent can a particular place, with a team approach to primary care, substitute for a relationship with a particular individual? What type of organization and financing is most conducive to attaining the important features of primary care?

What mechanisms are most appropriate for designing benefit packages? What strategies are best for assessing community health needs so that they are reflected in the design of primary health services? How can primary care practitioners be trained so that they are best able to identify patients' and their community's health problems? What are the best mechanisms for tracing the natural history of problems in primary care, so that they are amenable to medical effectiveness studies at least comparable in quality to those conducted in hospitals and specialty settings?

What are the disadvantages of discouraging self-referrals to specialists and what are the situations in which it might be appropriate? To what extent can client-held records, smart cards, or computerized information systems enhance coordination of care and thereby improve its effectiveness and efficiency? How can science-based guidelines for referral be developed and incorporated in the training of primary care physicians? How can specialists be encouraged in the science and art of supporting primary care physicians?

How does the availability of technology alter the achievement of the cardinal features of primary care? How can technology be harnessed to improve primary care practices?

How can the benefits of a gatekeeper system be maintained despite incentives to reduce access to specialty services that might be needed? What financing mechanisms most encourage the four important features of primary care? Does the fee-for-service reimbursement system interfere with primary care principles and, if so, can its disadvantages be overcome, or must we consider changing to another mechanism of financing? That is, how can we build accountability for effectiveness and efficiency into our system?

These research issues that are unique to primary care are complemented by others that are common to both primary and specialty care. The determinants of quality of services and mechanisms to improve it are just as important in primary care as in specialty care. Research on physician-patient communication and ways of enhancing the self-efficacy of patients are at least as important in primary care as it is in specialty care and perhaps more so, since one of the attributes of primary care is a long-term relationship that is not specific to any particular problem or type of problem.

Any research in primary care has special challenges. Generalizability of findings is particularly problematic because practice organization is likely to be much less formalized than in institutional settings. The absence of research competence among most primary care practitioners is another problem. Most current clinical and health services research takes place in academic settings where trained researchers are available to help clinicians lacking those skills. If academic researchers are permitted to determine the questions for research, the questions are likely to reflect the interests and knowledge of the academic institution rather than the primary care practice. Another challenge to research in primary care stems from the general unavailability of time that can be released from clinical care to devote to research in a primary care practice.

For these reasons, collaborative research is an appealing approach for primary care. There are already two major national collaborative efforts, one in family medicine (ASPN, or Ambulatory Sentinel Practices Network) and one in Pediatrics (PROS, or Practice-based Research in Office Settings). Both networks evolved from professional organizations rather than from academic institutions, and both actively involve primary care practitioners in generating research topics and strategies, rather than merely collecting data relevant to a research issue. These networks are, therefore, building a capacity for research in practice as well as obtaining information to advance the science of primary care. These research networks in primary care pose special problems for scientific review panels, which are usually composed of individuals who are specialists and who are based in academic institutions. Criteria for review of importance and potential impact, and of technical merit may need modification when applied to primary care, and new techniques for review of research proposals in primary care issues may have to be developed.

Definitions, terminology, and methods of measurement need to be standardized in order for research to be understood, replicated, and translated into practice and policy. The term "primary care" itself has to be understood to mean the same thing to everyone; researchers need to speak the same language in order to communicate.

This paper suggests a definition of the concept of primary care and of its elements. Techniques to measure the important components of primary care follow from the definition; many are already available and have already proven their usefulness in their application in several studies (Starfield, 1992). The widely perceived crises in the health system make this a particularly opportune time to apply them in a concerted strategy for a program of research in primary care.

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Winners and Losers:
Primary and High-Technology Care Under Health Care Rationing

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Interest in health care rationing has exploded over the last five years. No longer solely the province of a few medical ethicists and other academics, rationing has moved to the center of the health policy debate as a serious option for cost containment and possibly as a necessary precondition of providing health care to the uninsured. For example, the State of Oregon proposes to cover all poor people under its Medicaid program, but at the price of explicit and public rationing of their medical care.[1] Health insurers and benefit managers for large corporations are increasingly being asked by patients and providers to decide whether certain very expensive, but potentially life-saving medical treatments will be reimbursed.[2] Concern about rationing is reflected in the Medicare program by such policy questions as whether Medicare should pay for liver transplants or, more broadly, whether the Health Care Financing Administration should use cost factors in determining which new procedures and devices to cover.[3]

The new interest in health care rationing is the result of the extremely high rate of increase in health care expenditures, combined with the perception that other efforts at cost containment have failed. National health expenditures increased from $240 billion in 1980 to $671 billion in 1990, at an annual rate of increase of 10.4 percent.[4] To a significant extent, government and employers have done in the 1980s what health care experts told them to do to control costs, but the rate of increase in spending has not substantially declined.[5]

Moreover, there is a widespread perception that, as a society, we are spending a lot more on health care, but not getting a whole lot healthier. In short, doubts about whether we are getting our money's worth have combined with the perception that health care costs are completely out of control. As a result, there is a sense of desperation about cost control that did not exist previously. Uncontrolled health care costs will inevitably make health insurance unaffordable to a growing number of Americans.

Most proposals for addressing health care for the uninsured promise to provide access to "basic" care. Indeed, some of the proposals even embody this notion in their titles--for example, the Oregon Basic Health Services Act of 1989 and Washington State's Basic Health Plan. In this context, "basic" care seems to refer to essential care or some minimum set of core health services below which no one should fall. Receiving basic care may be considered a moral right. However, the idea of guaranteeing only "basic" care carries the implicit message that the service package is "lean and mean" and that not all services will be covered. This, in turn, implies some sort of rationing.

Unfortunately, there is no widespread consensus on what constitutes a "basic" service package, and proposals that explicitly exclude certain services have met extremely forceful opposition. In general, many of the proposals have an expressed preference for primary care at the expense of high technology services.[6]

Beyond the controversy over health care rationing is the broader question of resource allocation. Proposals for reform that include setting fixed national budgets for health care--such as those proposed separately by Senator Robert Kerry and by Senator George Mitchell, John Holahan and others at the Urban Institute, the Physicians for National Health Program, the National Leadership Coalition for Health Care Reform, and the AFL-CIO--must address virtually the same issues that must be answered in any scheme that proposes explicit rationing.[7-10] Indeed, a fixed budget may be necessary to provide the moral preconditions for rationing.

At present, tradeoffs between primary care and high technology do not occur in the United States because it is impossible to say where the money "saved" from constraints in health spending ends up.[11] In other countries, where there is a socially-agreed-upon health budget, cuts in one area can be justified on the grounds that the money will be spent on other, higher priority services. This closed system of funding provides a moral underpinning for resource allocation across a range of potentially unlimited demands.

Some fundamental questions in designing health care reform include: What services will be covered? How readily available will covered services be? By what criteria will it be decided that certain services will not be covered? What role will community values and patient preferences play in coverage decisions? What will be the balance between primary care and high-technology services? Although it is often asserted that primary care is synonymous with basic care (that is, the morally minimum set of services that all persons should receive), the relationship is not obvious and cogent arguments can be made for alternative allocation schemes.

The remainder of this paper will define rationing and primary care and then focus on four different methods of resource allocation in health care, with the emphasis on the tradeoff between primary care and high-technology services.

I. What is Meant by Health Care Rationing and by Primary Care?

Rationing is an emotionally-charged term with many different definitions. In this paper, we use the term to mean "any mechanism for allocating resources (including the market) in contexts in which demand (or need) is not completely satisfied--that is, any mechanism of resource allocation under conditions of scarcity."[12] In the health care context, rationing means the decision to withhold certain medical services that would be clinically beneficial regardless of whether the individual has the means to pay for them. Under this definition, rationing, mostly in the form of limiting services by ability to pay, is already widely practiced in the United States, especially among the uninsured.[13]

Primary care is also not easy to define precisely. In common usage, it refers to care for acute and chronic illnesses that is low-technology, often preventive in nature, and typically inexpensive on a per-unit basis. Other definitions emphasize that it is "first-contact care," which ideally is also accessible, comprehensive, coordinated, continuous and accountable.[14] The traditional providers of primary care are the generalists of medicine--family or general practitioners, pediatricians, internists, obstetricians/gynecologists, as well as physician assistants, nurses, and nurse practitioners.

II. The Status Quo: Rationing People, Not Services

In the United States currently, care is rationed by whether one has third-party coverage and by what type of coverage that is.[15] The situation is most stark for the uninsured. Individuals without health insurance must either pay out-of-pocket (if they can), rely on charity care (if they can find providers willing to supply it), or go without. As a result, health care use among the uninsured is well below that of the insured. For example, among persons in poor or fair health, the uninsured have only half as many physician visits as do the insured.[16] Once within the health care service system, recent studies suggest that treatment varies by insurance status, with the uninsured receiving fewer services than either the Medicaid or privately-insured populations.[17] The uninsured face limited access to both primary care and specialized, high technology services.

As common as this rationing is, it is largely the unintended result of other decisions about the health care system. Thus, the low rate of physician use by the uninsured is the consequence of the choices Americans have made about how health insurance will be distributed. It is not the result of a conscious policy decision that certain persons should receive limited access to medical care.

For the bulk of people with Medicare and private insurance, however, cost is not currently an important component of treatment decisions and access to high-technology services is quite easy. Indeed, there are more high-technology services in the United States per capita than anywhere else in the world.[18] Doctors order whatever tests and procedures they think are medically desirable and third parties pretty much pay for whatever the doctor thinks is appropriate. Physicians are trained as patient advocates to do whatever is medically possible to help restore or maintain health and to prolong the life of the patient.[19] Managed care strategies have yet to alter these arrangements materially.[20]

For the Medicaid-eligible population, the current situation is more complex and quite variable across States. In general, financial eligibility standards are extremely low, in the range of only 50 percent of the Federal poverty line for families with dependent children.[21] Once eligible, Medicaid beneficiaries are still unable to match the access accorded persons with private insurance, although their situation is generally better than the uninsured.[22] While Medicaid's list of mandatory covered services is quite comprehensive, State Medicaid programs commonly impose arbitrary limits on such services as physician visits and hospital days.[23] Moreover, reimbursement levels, especially for physician services, are generally low when compared to private insurance or Medicare, which explains some of the limited program participation by doctors.[24]

The financial eligibility and coverage provisions are better for pregnant women and young children than they are for the rest of the Medicaid population. Federal law requires States to provide Medicaid to all pregnant women and children under the age of six with incomes below 133 percent of the poverty level. On a phased basis, states will have to provide coverage to all children under the age of 19 with incomes below 100 percent of the Federal poverty level. Moreover, for children, the early, periodic, screening, diagnostic, and treatment (EPSDT) program, which is a comprehensive package of prevention and assessment services, is part of the mandatory benefit package.

Further, the Omnibus Budget Reconciliation Act of 1989 requires States to provide all services medically necessary to treat problems uncovered during a child's EPSDT exam and prohibits the imposition of limits on the amount of services covered.[25] Despite this generous benefit package for pregnant women and children, obtaining access to these services remains difficult because of the low program participation by obstetricians and pediatricians.[26] An even bigger problem is the absence of providers in many low-income areas.[27]

The current situation has few defenders. The easy availability of high technology has led both to high costs and to inappropriate use. A variety of studies have found that a substantial portion of coronary angiographies, carotoid endarectomies, coronary artery bypasses, and upper gastroinestinal endoscopies were not necessary.[28] Moreover, public opinion polls overwhelming find that Americans believe that ability to pay should not be an obstacle to receiving needed health care.[29] The status quo means that some persons with extensive insurance and substantial personal resources have access to virtually all services imaginable, regardless of the cost and regardless of the benefit, while others without any insurance lack guaranteed access to all but emergency services. This is widely perceived as unfair and unjust.[30] The question is how to change it.

III. An Unquantified Preference for Primary Care

A different way of allocating resources is to provide health insurance for everyone, but to alter the type of services available. This model represents what Canada and virtually all European countries provide in their health care systems. In these systems, there is a strong preference for low-technology, inexpensive, prevention-oriented primary care and a strong bias against the provision of high-technology, specialty care provided in tertiary care facilities. Between these extremes, there is also a noticeable tendency toward postponing or avoiding hospitalization for various elective procedures like lens surgery, tonsillectomy, prostatectomy, and hysterectomy.[31] This tendency reflects both fewer physician specialists and greater uncertainty about the appropriate indications for these types of operations.[32] This system is less likely to over-emphasize benefits and under-emphasize costs for elective procedures than unconstrained systems. In essence, what distinguishes this approach from other strategies is that the primacy of primary care (at the expense of some elective procedures and most tertiary care) has been made without the explicit calculation of costs and benefits of all services.

The degree to which medical technology is constrained in Canada and Western Europe varies greatly across countries and services, but there is little doubt that privately insured Americans have far greater access to many high technology services. For example, the United States has twice the rate per million persons receiving treatment for end-stage renal disease than does Great Britain.[33] In the late 1980's, the United States had more than twice the number of open heart surgical units per million persons as Canada and nearly five times the number as West Germany; and, seven times the number of magnetic resonance imagers (MRI's) per million persons as West Germany and four times the number as Canada.[34]

This lower use in other countries is partly due to a lack of money for equipment and partly due to a more skeptical view of technology on the part of physicians.[35] Fixed budgets make it more difficult to purchase new technology because these new expenditures must be made at the expense of existing programs. Moreover, the politics of distribution favors programs (like primary care) that provide some benefits to everyone over programs (like high-technology services) that provide benefits only to a relative few. One result in the United Kingdom and, to a lesser extent, Canada is waiting lists for some services that are almost immediately available in the United States to the privately insured.[36]

While this resource allocation strategy gives patients easy access to primary care, this system can be faulted in three ways. First, many of the ailments that people go to their primary care physicians to treat are relatively minor and self-limiting, whereas many of the problems that people go to specialists to treat are life-and-death matters. It is not clear why coverage of treatment of the flu by a primary care physician is preferable to the provision of expensive, high-technology open heart surgery, which may mean the difference between life and death. To be sure, the patient may still die after receiving the high-technology service, but few of us face that prospect when we receive primary care. Indeed, because of that life-and-death aspect, a strong argument can be made that tertiary care is more worthy of coverage than is primary care.

Second, while it is often asserted that preventive and other primary care services can reduce overall health expenditures by making us healthier, this claim is not well documented. Prevention services are highly desirable, but many are likely to increase rather than decrease total health expenditures.[37] While many prevention activities are inexpensive on a per-person, per-treatment basis, when they are applied to large numbers of people, most of whom would never get the disease, costs multiply. Moreover, the intervention often must be repeated over a long period of time (e.g., hypertension medicine). In addition, most of the diseases on which prevention efforts are focused (e.g., cancer, heart disease) are relatively quick killers. Preventing or postponing these diseases will leave us vulnerable to longer term chronic diseases (such as Alzheimer's disease) which are expensive to treat and last a long time. To reiterate, this is not to say that preventive services are not desirable because they are; it is only to say that they are unlikely to achieve cost savings.

Third, granting primacy to primary care in the United States ignores present capacity. In other countries, resources are limited to start with and services are allocated subject to those limits. By contrast, the American health care system starts with excess hospital beds and a very large number of physicians who are specialists eager to practice their craft. Thus, the American medical care system has the physical means to perform almost any procedure imaginable, including those that the political system may consciously choose not to cover on a widespread basis. Reallocating spending toward primary care would be extremely difficult, given the availability of medical personnel and services in the United States.

IV. Allocation by Systematic Cost-Effectiveness Analysis

Another option for deciding on spending or coverage priorities under a fixed budget is to systematically take the costs of health care services and the benefits they provide into account through cost-effectiveness or cost-utility analysis. According to Hadorn, "Traditional cost-effectiveness theory dictates that in developing a priority list of services the cost of each service should be divided by some measure of the health benefit that is expected from treatment. Benefit is often defined in terms of 'quality adjusted life years' benefit or harm of a treatment with its overall impact on quality of life."[38] Once the cost-effectiveness ratio for various services has been computed, they are ranked according to the size of the ratio from highest to lowest and selected from the top until available resources are exhausted.[39] This procedure maximizes possible expected health benefit, subject to the resource constraints in effect.

This cost-utility analysis was the approach that the State of Oregon first tried in its effort to establish a "basic" set of services that would be extended to the State's uninsured poor, replacing the existing benefit package for the Medicaid population.[40]

The first priority ranking list of conditions and their associated treatments was released in May 1990 by the Oregon Health Services Commission, to almost universal condemnation. The problem was that some intuitively highly valued services were ranked quite low on the rating scale and almost identical in position on the list with some intuitively low-ranked services. For example, treatment of appendectomy and ectopic pregnancy, conditions that are usually fatal without successful surgical intervention, were ranked in the middle of the list, along with tooth capping for pulp exposure and splints for temporomandibular joint disorder, two relatively minor conditions that may resolve even without treatment.[41]

What explains these counterintuitive results? Mathematically, what happened is that the cost per benefit of certain high-cost/high-benefit procedures turned out to be equivalent to the cost per benefit of certain low-cost/low-benefit procedures. Oregon officials and others blamed the problem on poor data, computational errors, and the short timeframe under which the list had to be generated.[42]

Others believe the methodology is fundamentally flawed because it does not take into account the powerful human need to save an endangered life, a proclivity labelled "the rule of rescue."[43] This argument suggests that people will not stand idly by when an identifiable individual's life is visibly threatened and effective rescue measures are available. The "rule of rescue" requires us to reject the notion that tooth capping for 1,000 people produces equivalent benefits to life-saving surgery for one ectopic pregnancy. However, Kaplan notes that we make these choices all the time and that these are exactly the kinds of tradeoffs that are inherent in proposals to cover primary care at the expense of high-technology services.[44] Although defenders of the cost/utility analysis contend that the methodology can successfully take the "rule of rescue" into account by including measures of "vicarious utility," it is hard to see how this would be operationalized.[45]

V. Allocation by Community Values

A fourth option for allocating resources is a mixture of the cost-effectiveness analysis described above combined with rankings of general categories of conditions and treatments, ostensibly reflecting the values and opinions of the community. This is the method utilized by the Oregon Health Services Commission in their second priority ranking scheme.[46] In brief, the Oregon Health Services Commission first developed 17 general categories of conditions and treatments (such as conditions for which the treatment prevents death with full recovery and acute conditions for which treatment improves the quality of life without a return to previous health) (see Table 1). Then the Commission placed each of 709 condition/treatment pairs into one of the 17 categories. Within these categories, condition/treatment pairs were ranked by a "net benefit" formula that assessed the impact of treatments on quality of life and the clinical effectiveness of treatments. Importantly, the "net benefit" calculations were divorced from cost considerations. Finally, commissioners moved certain condition/treatment pairs up and down the list "by hand" when they felt that they were improperly ranked. Here, the cost and effectiveness of various treatments played a major role in the decisions of the commissioners. This revised list was released in February 1991 and has since served as the foundation for the rationing proposal put forth by the State of Oregon.

Most observers have found the revised list to be intuitively more appealing than the original rankings. The revised Oregon list also finesses some of the debate over high versus low-technology services by giving relatively high priority to some highly valued low-technology services such as prenatal care and preventive care for children, as well as to some costly, but potentially life-saving, high-technology services, such as kidney and most bone marrow transplants.

Despite the improvement in the priority list over the first effort, many problems remain. First, while much of the ranking list has intuitive appeal (for example, appendectomy for appendicitis is ranked above medical therapy for asthma, which is ranked above treatment for diaper rash), some of the rankings raise major questions about how it was decided what should be placed where. For example, routine dental care ranks far above hip replacements even though these latter procedures have substantial positive impacts on quality of life. Another example is that vasectomies are ranked far above corneal transplants for cataracts, even though there are less costly and highly effective alternatives available to vasectomies, whereas blindness may result from cataracts. In general, the very high rankings given to prevention services over interventions for acute and chronic problems raises questions about whether this subjective methodology adequately conforms to a more general "rule of rescue" which would include a concern for correcting or avoiding significant disability in addition to a concern for loss of life.[47]

Second, the rankings are overly simplistic, failing to address the range of severity within diagnoses and the potential effectiveness of alternative treatments. To make the number of conditions and treatments manageable, commissioners compressed too many conditions and possible treatments into too few categories. Each diagnosis, therefore, includes some people for whom the benefits of treatment are small and others for whom the benefits are large, thus violating the assumption of homogeneity under which the rankings are presumably made. For example, as Schwartz and Aaron point out, the clinical efficacy of treatment for colon cancer is highly variable.[48] If the tumor is limited to the lining of the bowel, surgery will completely cure almost all patients. If the cancer penetrates the bowel wall, the death rate increases substantially. And if the cancer has migrated to a distant site, surgery is useful only in relieving obstruction of the bowel. Thus, the benefits from coverage of surgery for colon cancer will be large for some people and small for others. And because the low-benefit service has been covered, other procedures will go uncovered, a situation that is both inequitable and inefficient.

Finally, although the official description of the ranking process emphasizes the hard calculation of net benefits using quality of life measures, there is as much art as science in the final priority list. For most condition-treatment pairs, there are no empirical data on which to base the judgments of their likely effectiveness: the calculations of clinical effectiveness are "guesstimates" by Oregon physicians. In addition, according to a preliminary analysis by the Office of Technology Assessment (OTA), the "by hand" adjustments by members of the Oregon Health Services Commission were substantial.[49]

During the final rankings, nearly 25 percent ot condition-treatment pairs were moved up or down 100 lines or more and another 15 percent were moved at least 50 lines. As a result, OTA concluded, "the exact ranking of the final list would probably not be replicated if a similar process were undertaken elsewhere." In short, the rankings may be largely idiosyncratic to the members of the Oregon Health Services Commission and may not accurately reflect the opinions of the majority of Oregonians.[50] Many involved with the process hotly contest this conclusion and insist that, although difficult to trace, the extensive public comment received prior to the development of the list had a major impact on commissioners who felt constrained to act as agents of the community.[51]

VI. Conclusions

The present system of health care, with its explosive increases in costs and growing numbers of uninsured, is both unfair and financially unsupportable over the long run. As a result, policy makers will be looking increasingly at the options of rationing and setting national budgets for health care. Both of these strategies require decisions about the allocation of resources between low-technology primary care and high-technology specialty care. On balance, virtually all of the major proposals for reform would make primary care more accessible than it is now. But the key question is: how much will improvements in access to primary care be at the expense of high-technology services?

All other countries place much greater restrictions on the availability of specialty services than exist in the United States. Notably, however, the "primacy of primary care" strategy has evolved without a lot of systematic or quantitative analyses about the relative costs and benefits of the two types of care. Application of this model to the United States, at least over the short run, will be difficult because of the enormous excess capacity of hospital and specialty physicians. It also will be difficult because Americans like high-technology services and associate it with high-quality care.[52] Indeed, it is what they like best about the current system.

Two other recent efforts to determine the appropriate balance--both undertaken by the State of Oregon as part of its effort to design a new benefit package for the uninsured and the current Medicaid population--relied heavily on quantitative evaluations of the efficacy of medical treatments. The first, relying on classical cost-effectiveness analysis, produced a priority ranking of conditions and treatments that was rejected as unreasonable almost instantly. The principal problem was the inability of the methodology to cope with the "rule of rescue," the idea that saving a single life is more worthy than providing a small benefit to a large number of persons.

The second effort, while including effectiveness analyses, was based more on the values of the community and the persons actually doing the ranking. While most observers believe that the second list is better than the first, some counter-intuitive rankings remain, and the path between community values and the rankings is murky at best. Moreover, a common problem for both efforts is that the list of ranked condition/treatment pairs are too broad, failing to take into account variation in severity. As an example, with only 709 categories, each item on the list includes some individuals for whom treatment will be very valuable and others for whom it will provide only small or no benefit. Thus, coverage of that service, at the expense of other services, will be unfair and inequitable.

In sum, the fact is that all of the currently used methods for determining the balance of primary and specialty care are flawed and are not sustainable, either medically or politically. More research is urgently needed about the effectiveness of various procedures.[53] These studies need to be done in a way that allows comparisons across services. Given the failure of other approaches to contain costs and the moral need to provide all Americans with access to basic health services (whatever they may be), resource allocation decisions--which some will call rationing--are going to be made one way or another.

Notes

1. Martin A. Strosberg, Joshua M. Wiener, and Robert Baker, with I. Alan Fein, eds., Rationing America's Medical Care: The Oregon Plan and Beyond, (Washington, D.C.: The Brookings Institution, forthcoming 1992); John Kitzhaber, "A Healthier Approach to Health Care," Issues in Science and Technology, vol. 7 (Winter 1990-91), pp. 59-65; and, Jean Thorne, "The Oregon Plan: Rejecting Invisible Rationing," The Internist, July/August 1990, pp. 9-11.

2. Glenn Kramon, "Rockwell's Point Man in the Health-Care Campaign," New York Times, April 7, 1991, p.5, Business Section.

3. Carl Irwin, "Testimony," presented at "Organ Transplants: Choices and Criteria, Who Lives, Who Dies, Who Pays?" a hearing of the Select Committee on Aging, U.S. House of Representatives, Washington, D.C., April 26, 1991; Robert E. Wren, "Statement," presented at "Organ Transplants: Choices and Criteria, Who Lives, Who Dies, Who Pays?" a hearing of the Select Committee on Aging, U.S. House of Representatives, Washington, D.C., April 26, 1991; and, Robert Pear, "Medicare to Weigh Cost as a Factor in Reimbursement," New York Times, April 21, 1991, p. A1.

4. Authors' calculations based on: Malcolm Gladwell, "Health Costs' Share of GNP Up Sharply," Washington Post, April 23, 1991, p. A6; and, Katherine R. Levitt and others, "National Health Care Spending, 1989," Health Affairs, vol. 10 (Spring 1991), pp. 117-130.

5. For a review of the failure of cost containment, see, for example: Stanley B. Jones, "Multiple Choice Health Insurance: The Lessons and Challenge to Private Insurers," Inquiry vol. 27 (Summary 1990), pp. 161-166. Health care spending increased by 11.6 percent between 1989 and 1990 and by 11.1 percent between 1988 and 1989. Gladwell, "Health Costs' Share of GNP Up Sharply," April 23, 1991; and, Levitt and others, "National Health Care Spending, 1989," p. 118.

6. David M. Eddy, "What Care is 'Essential'? What Services are 'Basic'?" Journal of the American Medical Association, vol. 265 (February 13, 1991), pp. 782-788.

7. John Holahan, Marilyn Moon, W. Pete Welch and Stephen Zuckerman, "An American Approach to Health System Reform," Journal of the American Medical Association, vol. 265 (May 15, 1991), pp. 2537-2540.

8. David U. Himmelstein, Steffie Woolhandler, and the Writing Committing of the Working Group on Program Design, "A National Health Program for the United States: A Physicians' Proposal," New England Journal of Medicine, vol. 320 (January 12, 1989), pp. 102-108.

9. The National Leadership Coalition for Health Care Reform, Report of the National Leadership Coalition for Health Care Reform: Excellent Health Care for All Americans at Reasonable Cost, (Washington, D.C.: The Coalition, 1991.)

10. Lane Kirkland, "A Labor Leader's View of Insurance Reform," Health Affairs, vol. 10 (Winter 1991), p. 181.

11. Normal Daniels, "Why Saying No to Patients in the United States Is So Hard," New England Journal of Medicine, vol. 314 (May 22, 1986), pp. 1380-83.

12. Robert Baker, "The Inevitability of Health Care Rationing: A Case Study of Rationing in the British Health Service," in Strosberg, Wiener, and Baker, eds., Rationing America's Medical Care: The Oregon Plan and Beyond.

13. Jeffrey C. Merrill and Alan B. Cohen, "The Emperor's New Clothes: Unraveling the Myths About Rationing," Inquiry, vol. 24 (Summer 1987), pp. 105-109. It should be noted that economists generally do not like this definition, contending that markets do not ration and that rationing only occurs among those who have the means to pay for a service. See, for example, Henry A. Aaron, "The Oregon Plan," in Strosberg, Wiener, and Baker, Rationing America's Medical Care: The Oregon Plan and Beyond. While the economist's definition probably is more technically correct, it is inconsistent with common usage of the term, which is much more encompassing.

14. Institute of Medicine, "A Manpower Policy for Primary Health Care: Report of a Study," (Washington, D.C.: National Academy of Sciences, 1978).

15. Joshua M. Wiener, "Rationing America's Medical Care: Overt and Covert," in Strosberg, Wiener, and Baker, Rationing America's Medical Care: The Oregon Plan and Beyond.

16. Howard E. Freeman and others, "Uninsured Working-Age Adults: Characteristics and Consequences," Health Services Research, vol. 24 (February 1990), p. 819.

17. Mark B. Wenneker, Joel S. Weissman and Arnold M. Epstein, "The Association of Payer with Utilization of Cardiac Procedures in Massachusetts," Journal of the American Medical Association, vol. 264 (September 12, 1990), pp. 1255-1295; and, Jack Hadley, Earl P. Steinberg and Judith Feder, "Comparison of Uninsured and Privately Insured Hospital Patients," Journal of the American Medical Association, vol. 265 (January 16, 1991), pp. 374-379; and, Paula A. Braveman, Susan Egerter, Trude Bennett, and Jonathan Showstack, "Differences in Hospital Resource Allocation Among Sick Newborns According to Insurance Coverage," Journal of the American Medical Association, vol. 206 (December 18, 1991), pp. 3300-3308.

18. Dale A. Rublee, "Medical Technology in Canada, Germany, and the United States," Health Affairs, vol. 8 (Fall 1989), pp. 178-181.

19. Norman Daniels, "Why Saying No to Patients is so Hard in the United States," New England Journal of Medicine, vol. 314 (May 22, 1986), pp. 1380-1386.

20. Robert H. Miller and Harold S. Luft, "Diversity and Transition in Health Insurance Plans," Health Affairs, vol. 10, no. 4, Winter 1991, pp. 37-47.

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TABLE 1

Categories of Services Used in the Prioritization Process

Category	Description
Essential Services	
1. **Acute Fatal I**	Prevents death with full recovery *Example: Appendectomy for appendicitis*
2. **Maternity Care**	Including most disorders of the newborn *Example: Obstetrical care for pregnancy*
3. **Acute Fatal II**	Prevents death without full recovery *Example: Medical therapy for acute bacterial meningitis*
4. **Preventive Care for Children**	*Example: Immunizations*
5. **Chronic Fatal**	Improves life span and quality of life *Example: Medical therapy for asthma*
6. **Reproductive Services**	Excludes maternity/infertility services *Example: Contraceptive management*
7. **Comfort Care**	Palliative therapy for imminent death *Example: Hospice care*
8. **Preventive Dental Care**	Adults and children *Example: Cleaning and fluoride applications*
9. **Proven Effective Preventive Care for Adults**	*Example: Mammograms*
Very Important Services	
10. **Acute Nonfatal I**	Causes return to previous health state *Example: Restorative dental services for dental caries*
11. **Chronic Nonfatal I**	One-time treatment improves quality of life *Example: Hip replacement*
12. **Acute Nonfatal II**	Without return to previous health *Example: Arthriscopic repair of internal knee derangement*
13. **Chronic Nonfatal II**	Repetitive treatment improves quality of life *Example: Medical therapy for chronic sinusitis*

(Continued on next page)

(Table 1 continued)

Services that are Valuable to Certain Individuals

14.	**Acute Nonfatal**	Expedites recovery of self-limiting conditions *Example: Medical therapy for non-fungal diaper rash*
15.	**Infertility Services**	*Example: In-vitro fertilization*
16.	**Less Effective Preventive Care for Adults**	*Example: Screening of non-pregnant adults for diabetes*
17.	**Fatal or Nonfatal**	Minimal or no improvement in quality of life *Example: Medical therapy for viral warts*

Source: Adapted from Oregon waiver application

What We've Always Wanted To Know About Other Countries' Health Care Systems, but Were Afraid To Ask

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Introduction

The question that will be discussed in this paper is: what are the obstacles and barriers to importing components of other countries' health care systems? I'll follow a basically simple structure in my answer. Why do we take over things from other people or other countries or why don't we. The answers are subdivided into some very down-to-earth categories:

1. Because we do not know, are ignorant
2. Because we must and are forced to do so
3. Because we cannot, or we cannot afford to
4. Because do not want to and hate the very idea of it

This paper is subdivided into three sections:

The **introduction** is followed by a section that deals with **further questions**, and possible **answers**. In section 3 we conclude the paper with a **proposal for a solution**.

Before I start, I should explain who 'WE' are in the four subsections. With 'we' I mean the American policy makers and politicians, representing the public opinion; sometimes I refer to public opinion only in case there seems to be a discrepancy between the results of opinion polls about the American health care system and the proposed policies.

Questions and Answers

Because we do not know

Unless American politicians and their staff simply do not read American health policy journals like the well-informed and lively *Health Affairs* or the slightly more sophisticated *Journal of Health Politics, Policy and Law*, it cannot be maintained that no information is available on other countries' health care systems. Authors like William Glaser, Uwe Reinhardt, and Milton Roemer, to mention just a few, know more about 'foreign' experiences in health care organization and financing than their non-American counterparts and they (certainly someone like Uwe Reinhardt) usually write their well documented papers in a transparent and fully comprehensible way.

And apart from them there are always their Canadian colleagues Bob Evans, Morris Barer, and Greg Stoddard, who do not get tired of pointing out the differences between the American and Canadian health care systems in favor of Canada.[1,2] They state that the Canadian health care system is cheaper and more efficient, and that it provides a greater equity (there are no uninsured people in Canada), and it is immensely popular. Evans states that the 1971 health care reform was accepted in parliament unanimously; even the declaration of war on Germany had one vote against it.[3]

There have been critical remarks about the comparability of the macro-economic indicators, like the proportion of the Gross National Product spent on health care; in a taxation based health care system, some costs (like the costs of collecting and allocating premiums and taxes) are hidden in general government spending costs, while capital costs are usually underestimated, because they tend to appear in the books on an artificially low level. So comparing a typical market system like the American and a tax-based system like the British National Health Service is not quite fair to the market system (and some cynical critics add that Canadians who do not get what they want in their rationed health care system go shopping for CT-scans and elective surgery at the other side of the border, thus contributing to the higher American costs and relieving the Canadian budget). However, the combination of relatively high costs and poor (health) indicators, like the number of uninsured and relatively high rates of perinatal mortality, cannot be denied in the United States.[4,5]

Because of the tenacity of the American health care problems, American policy makers are much better informed about foreign solutions than their European counterparts.

An example. William Glaser fulminates against the complicated way (by means of a long-term econometric study) Americans establish the terms of their physicians' fees.[6] There is a (Congress initiated) Physician Payment Review Committee; the Secretary of Health establishes the Medicare B budget in accordance with the best Brezhnev central planning traditions; there is a Harvard study group that has produced (according to Glaser by superficial telephone surveys) a Relative Value Scale of services that would reallocate tariffs for surgery so drastically that the opposition of doctors organizations became almost insurmountable.[7,8] Glaser states that "in the overstudied and overdocumented field of health care finance, legal and administrative mechanisms could have been drafted and introduced during the mid-80's when everyone realized that reform was urgent."

Glaser advocates a negotiation structure instead of costly studies and an extremely complicated calculating system. He points to the German health care system where budgets have just been negotiated between the public health insurance authorities and the organizations of physicians. In such a situation the different specialties have to solve their own problems, and changes are much more gradual than in a system where budget neutrality is required and a new calculation method is introduced abruptly.

A paper by Lomas and associates shows how the successive Canadian provinces have tried to solve this problem.[9] Canada has no single and comprehensive health care system; the provinces have considerable freedom to solve their organizational problems. Quebec has the most rigorous system, with tariffs related to a target income for physicians; for the French speaking doctors Paris is the nearest alternative for practicing; other provinces have established thresholds to the medical expenses with a list of exceptions (epidemics, technological progress, population growth). Sometimes there is a arbitration procedure, sometimes there is none. In each province there is a negotiation-structure. The lessons of these examples are: do not only establish tariffs, but make agreements about "volumes" too, in order to avoid the usual volume increase or a shift to more expensive or non-budgeted procedures after a tariff freeze.[10]

The Canadian example is relevant because the **provinces** have the authority to solve the payment problems, thus providing a variety of solutions for controlling quantities of services once prices have been fixed.

So, the argument "because we do not know" is not a valid argument. We know all the examples, and they are well documented, including illuminating discussions.

Because we must

In December 1991 a discreet ceremony took place in the Hague, the political capital of the Netherlands: the quiet celebration of the 50th anniversary of the so called "Sick Fund Decree," issued by the "Reichskommissar für die Niederlande," the German viceroy in the Netherlands during the Second World War.

The core of the still valid blue-print of the Dutch health care organization stems from the German occupation. The Nazis ended two decades of Dutch political guerilla between the physicians, the State and the "Sick Funds" about extending the public health insurance and power in the health reform proposals by introducing in the Netherlands the typical Bismarckian social insurance system (a German but not a Nazi invention, that has survived, according to De Swaan, two World Wars, National Socialism, and a foreign occupation) in the Netherlands.[11,12]

So the Dutch had to swallow, nose pinched, the German solution.

The United States has never experienced occupation; so it has never been forced to change its social and political institutions. It is just too big for that. Where small countries, like the Netherlands, are, more or less automatically, inclined to look across their borders, big countries tend to consider themselves as the alpha and omega of the universe.

This refutes the second reason, because we must or have been forced to do so.

Because we cannot

Bangladesh cannot afford to imitate the British social security system, but a country that is able to put a man on the moon, to win two global wars and many local ones, to defeat its arch-enemy by forcing him to choke on his own armament, would such a country not be able to organize a comprehensive health care system or to copy foreign examples?

The answer to this rhetoric question seems obvious, but there is a catch.

One cannot, as a rule, transplant isolated elements of an other country's health care system unpunished. Health care is connected to social security, to disability pensions and loss-of-wages legislation. Health care costs form part of the costs of living, and substantial planned changes can have unexpected consequences. In the Netherlands, post-war health care reforms always broke down because of the unacceptable changes in the distribution of incomes.

Insuring the uninsured without changing anything else would increase health care costs and public expenditure disproportionally. Introducing target-incomes for physicians would set a precedent for all professions, and so on.

This does not imply that one could not find inspiration in foreign examples, but because of the strongly intertwined elements of a health care system--one really could say that it is a "system"--pulling a loose end could cause unexpected surprises.[13]

So "because we cannot" is not completely untrue, but this can easily lead to a very un-American spell of fatalism.

Because we do not want to

If it is not ignorance, and if geopolitical forces protect us from occupation, and if "because we cannot" is only partially true, the fourth and last reason: because we do not want to, should, by implication, be the most important obstacle to taking over elements from other countries' health care systems.

But, who are "we"? Robert Blendon and his colleagues published an interesting paper about public opinion with regard to the health care systems in 10 nations.[14] The Italians and the Americans are the least satisfied with their health systems (United States 10 percent minor changes, 60 percent fundamental changes and 29 percent complete changes; Italy 12 percent minor, 46 percent fundamental, and 40 percent complete changes, respectively); the Canadians and the Dutch are the most positive (CDN 5 percent complete, 38 percent fundamental, 56 percent minor; NL 5 percent complete, 46 percent fundamental, 47 percent minor).[15] Blendon and associates indicate that in this 1990 survey two-thirds of their American respondents prefer the Canadian health care system to their own.

These are striking results, it is clear that the American public is extremely dissatisfied with its health care system. So we do want to take over elements from other countries, do we?

Well, that depends. The Blendon study has met serious criticisms; Jajich-toth and Roper report that in their own survey 45 percent supported the Canadian system; an equal proportion, compared to Blendon's survey, supported the American system (37 percent), but they had many more "don't know's."[16] The reason for that is, according to the authors, that Blendon and associates have used leading questions. They added one little sentence to their description of the Canadian health care system: "which costs the taxpayer less than the American system." Jajich-toth and Roper left this one out; they even found that the support for the Canadian system decreased considerably if taxes should be increased to implement it.

Taxes (the dreaded T-word) form the key obstacle to the American health care reform. As a Nation of immigrants, social security has always been a topic of low priority in the United States. It attracted people because of its opportunities to work hard and not because of the attractive elements of its social security system (according to De Swaan, o.c.). Only after the dramatic crisis of 1929, did people support Roosevelt's New Deal, which included protection against unemployment and an obligation to protect oneself against the hardships of old age by means of an adequate pension. In the mid-sixties Lyndon Johnson, Roosevelt's spiritual heir, succeeded in extending the rudimentary American welfare state to include social health insurance for the elderly and some strictly defined parts of the poor (especially mothers-on benefit with children). But that was all.

Work hard, no obstructions by all sorts of regulations and take care of yourself--that has always been the American creed. Not the State, that is the community, should provide protection for its citizens, but the hard working citizens themselves, independently. Voluntary associations of workers (Friendly Societies, Mutualities) that were the core of the early stages of social security have never been popular in the United States, and Federal programs to impose mandatory social insurance became only popular after the deepest and most dramatic crisis of capitalism in this century.

One is evidently dissatisfied with the ever increasing health care costs (among many other reasons much higher than necessary because of the all-American party game of suing each other) and the increasing number of uninsured, but the dislike of tax increases and Federal meddlesomeness is so widespread that obvious solutions to, or considerable improvements of the health care crisis, have been put aside. The immigrant and frontier mentality are the most important barriers and obstacles to not taking over elements from other health care systems but to solve the problems within the regular American framework of legislation and the conditions of the American economy. Only a crisis comparable to the recession of the thirties will morally prepare the American public for collective instead of individual solutions. As all relevant other countries (possibly, perhaps to some extent with the exception of the Swiss) have long ago preferred a more or less collective solution in the domain of social security and insurance against risks of illness and disability. Taking over elements will imply increasing premiums of the most powerful and influential groups in the American society: blue collar and white collar employees of middle-sized and big enterprises.

So, the answer to the four questions is: because we do not want to take over elements of other health care systems for other health care systems have a collective and not an individualistic base.

An American Solution

Reinhardt, in a comment on the above mentioned survey-study of Blendon a.o., summarizes the mid-1991 state of judgments and viewpoints regarding the American health care crisis as follows:

> "Government, business and the American taxpayer would dearly love to see health insurance and access to needed health care extended to every American but they believe that there is so much waste and overpayment within the present system that added millions of people could easily be brought into the fold in a budget neutral way."[17]

The providers of health care would dearly love to see that etc., etc., but they argue that Americans spend only the barest minimum needed to finance the care being delivered now that added numbers of Americans can be properly cared for if society is willing to spend an extra $30 to 60 billion on top the $700 billion that the Nation already spends on health care.

The private health insurance industry would dearly love to see that etc., etc., as long as policies aimed at that goal do not eat into the industry's market.

Reinhardt observes that the Medicare budget has tripled from 1980-1990; he argues that Medicare, Medicaid, and the uninsured actually underpay the hospital, who shift their risks to the least powerful groups of properly and privately insured persons: those who are not able to negotiate collective bargains via PPO's or HMO's. This implies that especially smaller business enterprises without enough momentum for collective bargaining will bear the full and shifted burden.

He mentions some options for the government:

1. Do nothing, but this will accelerate the erosion;

2. Extend Medicare and Medicaid to all Americans, but this won't go without extra taxation; and

3. Mandatory insurance for employers; this would decrease the number of uninsured with two-thirds. One could avoid the dreaded T-word if one would adopt an old plan of President Nixon (Community health Insurance Partnership) with mandatory contributions that don't need to be called "taxes." Small businesses will be against this because it does not solve their problem of paying the highest premiums because of lack of negotiating power.

According to Reinhardt additional regulations should prescribe "community rating" and prohibit premium differentiation.

President Bush did not comply with any of these suggestions in his 1992 State of the Union; he decreased the costs of health insurance for individuals by transferring part of it to pretax dollars, thus trimming off the sharpest edges.

Reinhardt's suggestions imply strong collective elements (community rating instead of regular experience rating) and this is still considered taboo.

From Federal to State Regulations

To a European, the United States is one big enigma. The aversion towards collective solutions of social security and health insurance puzzles him, because it is obvious that the costs will be lower, the efficiency will increase by increasing the grip on health care providers and this spot on the American blazon: the uninsured will disappear to small religious cohesive societies like the Amish.

On the other hand the European observer is impressed by the enormous variety that exists between even neighboring States; one State has capital punishment, the other abhors it; one State has sales tax, the other considers it equal to communism. One State almost bans smokers while the other worships them; the same goes for wine. Advertisements here in Washington are full of small print to indicate that citizens of Maryland should subtract or add other things that inhabitants of Virginia or Washington, DC, should not. A lawyer or a doctor cannot establish himself in a State other than the one where he has been trained without additional courses and exams. In short, where the severely centralized European Community (a French heritage) sincerely tries to harmonize sales tax within a range of four percent and worries about differences in alcohol excise between Denmark and Greece (for those not familiar with European geography: approximately 2,500 miles apart), but where social security and health care (still) is the domain of the individual member states, one wonders why there is so much uniformity in the U.S. health care system.

Why does the Oregon way of rationing health services require a specific Federal bill? Why are there so few States (as far as I have been able to find out only Massachusetts, Hawaii, and Oregon have, usually within the straitjacket of federally established budget regulations, tried to solve the equity problem themselves) that formulate their own health care policy.

In that case typically individually oriented States where the frontier culture is commonly accepted, will have only the barest minimal provisions, while States like Massachusetts or Oregon where the public does not react adversely to collective solutions could extend Medicare and Medicaid to the now uninsured combined with additional regulations about community rating and ceilings for prices and quantities of services. Of course, their margins of freedom will be narrow. If their legislation becomes too generous, they will attract too many social security tourists. If they squeeze their doctors too hard, these will move to the State next door (think of the poor Quebeckians, who will have to migrate to Europe), but if the population takes health care and equity serious, their elected politicians should have the freedom to shape their own health care systems.

There will, undoubtedly, be many reasons why the situation is as it is, but my final statement is that, instead of taking over things from other countries, it is better to allow a diversity at the level of American States, because in that case one can take over things from each other.

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    - intended for (and limited) to workers and their families
    - a certain paternalistic touch; mandatory for those under a certain income-level and voluntary participation or not applicable for the economically less vulnerable
    - a limited and distant role for the state; premiums are paid by employers and employees; the cumulated funds in trust of representatives of both parties.

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13. Characteristics of a social system are:
    - functional specificity
    - division of labor
    - target orientation
    - self maintenance

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